The effectiveness of national strategic guidelines at a local level: a case study of the UK general aviation industry.

A PhD (Planning Studies) thesis,

by Terence Lober : SN

The Bartlett School of Planning, University College, London.

ProQuest LLC
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106-1346

Declaration

I, Terence Lober , confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Signed: .... Date 30th January 2008

Abstract

The thesis is concerned with the prospects for reducing strategic-local tensions in the British planning process. It examines the conflicts surrounding small general aviation aerodromes as a means of understanding these tensions, why they have evolved, and if they might be reconciled through planning reform. The only prior academic research to have touched upon this issue through general aviation has been an ESRC funded project undertaken by Gallent and colleagues (1999), who found aerodromes provided a microcosm of planning's issues. Building on this work, the thesis develops what is meant by strategic-local tensions, which in broad terms are described as differences between national and regional guidance/plans and what actually takes place locally. Moving from a basic research question it develops a wide planning perspective based on the literature by discussing the meaning of planning, its history and issues; for example, how conflicts in planning might be influenced by the broader socio-political environment. The thesis then arrives at three hypotheses which question the effectiveness of the existing strategic guideline implementation process, develops a local planning authority framework and addresses issues of reflectivity and bias. Results from three national surveys of pilots, aerodromes and manufacturers, plus longitudinal analysis of government and other datasets, are then used to detail a comprehensive and unique description of general aviation, which includes a costing based account of the direct expenditure of flying activity. This provides a substantive foundation for a local planning authority survey which both extends previous boundaries and enables the process of implementing strategic objectives to be disaggregated and evaluated. Field visits to twenty six aerodromes and five local authorities are subsequently used to explore gaps within the strategic implementation process and to develop conclusions, within the wider landscape of planning, about the nature of strategic local tensions and implications for planning reform.

Table of contents

List of charts used

List of figures used

List of tables used

List of maps used

List of photographs used

List of abbreviations and acronyms used

Abbreviation /Acronym	
AAG	Average Annual Growth
AD	Aerodrome
AEF	Aviation Environment Federation
AESOP	The Association of European Schools of Planning
AFE	Airplan Flight Equipment
ANO	Air Navigation Order
AONB	Area of Outstanding Natural Beauty
AOPA	Aircraft Owners and Pilots Association
ATC	Air Traffic Control
BBGA	British Business and General Aviation Association
C of A	Certificate of Airworthiness
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
CAT	Commercial Air Transport
CPRE	Campaign to Protect Rural England *(formerly the Council for the Protection of Rural England)*
DCLG	Department for Communities and Local Government
DEFRA	Department for Environment, Food and Rural Affairs
DTLR	Department for Transport and the Local Regions *(subsequently split into the DfT and ODPM)*
DfT	Department for Transport
EIA	Environmental Impact Assessment
EIP	Examination In Public
ESDP	European Spatial Development Perspective
ESRC	Economic and Social Research Council
FAA	Federal Aviation Authority
FoE	Friends of the Earth
FRA	Foreign Registered Aircraft
FW	Fixed Wing
FWLP	Fixed Wing Land Plane
GA	General Aviation
GAAC	General Aviation Awareness Council
GAMTA	General Aviation Manufacturers and Traders Association
GASAR	General Aviation and Small Aerodrome Research (*project*)
GASR	General Aviation Strategic Review
GDO	General Development Order
GDPO	General Development Permitted Order
GINFO	Name for the UK aviation owner registration database
GIS	Geographical Information Software
IAOPA	International Aircraft Owners and Pilots Association
ICAO	International Civil Aviation Organisation
ILS	Instrument Landing System
LDF	Local Development Framework
LDP	Local Development Plan
LGA	Local Government Association
MEP	Multi Engined Piston
MTWA	Maximum Total Weight Authorised
ODPM	Office of the Deputy Prime Minister *(Planning responsibilities since reassigned to the DCLG)*
OEF	Oxford Economic Forecasting
OS	Ordinance Survey
PPG	Planning Policy Guideline
PPL	Private Pilot Licence
PPS	Planning Policy Statement

Abbreviation /Acronym

RPB	Regional Planning Body
RSS	Regional Spatial Strategy
RT	Radiotelephony
RTPI	Royal Town Planning Institute
SA	Sustainability Appraisal
SCAM	South Cambridgeshire Against Marshall
SCI	Statement of Community Involvement
SCRAMM	South Cambridgeshire Residents Against Marshall Moving
SEP	Single Engine Piston
SPSS	A commercial statistical analysis software
SRG	Safety Regulation Group (CAA)
TSO	The Stationery Office
UCL	University College, London

Acknowledgements

I would like to express heartfelt gratitude to my family, for enduring my determination to write this thesis, and to David Ogilvy, Jack Wells and Nick Gallent for sustaining it. Thanks also to GAAC and the Department for Transport for supporting the research and to all the other organisations and people who have contributed their time and effort.

CHAPTER ONE: INTRODUCTION

This chapter introduces the main themes of the thesis. It outlines the purpose of the thesis and seeks to justify the research based on a preliminary review of the literature. Then it explains why general aviation was seen to be a suitable case study subject, before assessing which of several issues was eventually chosen to provide the basic research question.

1.1 The purpose of this thesis

The thesis is concerned with strategic-local tensions in the planning process. It examines the conflicts surrounding small general aviation aerodromes as a basis for understanding these tensions, why they have evolved, and if they might be resolved through alternative planning approaches. The thesis will develop what is meant by strategic-local tensions, but in broad terms it refers to differences between national and regional guidance/plans and what actually takes place locally. Tensions and conflict have been consistently associated with planning (Thomas, 1997: 8, Healey, 1998: 7; Beierle, Konisky, 2000: 587; Booth, 2003: 193; Watson, 2003: 395; Gilg, 2005: 55; Cullingworth, Nadin, 2006: 1). Indeed Cullingworth and Nadin went as far as asserting the main aim of traditional land-use planning has been to address conflicts arising from the development of land. Since formal state regulation of land-use was introduced at the beginning of the last century, its ability to prevent, alleviate, eliminate or simply manage land-use tensions has ironically placed the planning community at the centre of more conflict; becoming entwined in complex debates concerning the reform of planning policies and practices. Those with an interest in reform, particularly academics, have regularly attempted to understand the issues involved, through post-modernist analysis and/or empirical research. The latter has repeatedly employed the 'case study' method, which seeks to explain specific findings within a particular sector and/or geographical area, and then generalise them to the wider planning landscape. This thesis follows this well tried path. Its purpose is to focus a revealing light, powered by specific case study tensions between local and strategic needs, upon similar land-use planning situations as experienced away from the general aviation industry.

The following sections in this chapter will endeavour to demonstrate the research was justified. It will then explain why general aviation was felt to be an appropriate case study choice to explore strategic-local tensions, whilst also exposing the main themes of the research and developing a basic research question. The key words used in this opening section, conflict, tensions, local, strategic, understanding and reform, will reoccur allowing related questions to surface naturally, so that they may be more fully examined in Chapter Two and contextualised as a basis for the research described in subsequent chapters.

1.2 Justification for the research

This section seeks to justify why the research was undertaken; by considering the events and concerns at the time of its inception, identifying the main issues and assessing if

the intervening years have brought any improvements or if the issues have remained largely unresolved, and so continue to be important subjects for investigation.

The research began in earnest at the beginning of 2002, against a background of imminent change within the planning community, following a change of government less than five years earlier that had promised sweeping reforms across a broad range of different policy fronts. One of these was an overhaul of the land-use planning system. Chapter Two will, amongst other things, explore the basis of the British land-use planning system, its original aims, the way in which it has developed over the past one hundred years, and the events that led up to this period at the beginning of the millennium. Consequently this section is restricted to a preliminary review of the concerns which justified the research, with a focus on strategic-local tensions during relatively recent times, both during the influential period before 2002 (which formed the basis of the research methodology) and more recent events after the empirical work was completed.

New Labour's Planning Green Paper (for England and Wales) was published in 2002 shortly after initiating the research. It was openly critical of the existing planning system, expressing the need for 'fundamental' change whilst accepting planning's problems made it "*the subject of constant attack and its decisions suspect*" (ODPM, 2002). The Green Paper asserted the planning system fell short of what was needed because it was "*complex, remote and hard to understand*". Its rules were said to be inefficient, slow and aimed at the prevention of development and not at promoting good development. Although it appeared to be 'consultative' it was thought not to engage communities or to be 'customer focussed'. Equally it was claimed planning often lacked the will for effective enforcement against those contravening the rules. The government's Green Paper comments reflected the sentiments of the time (Gilg, 1999, Lock, 2002), including those expressed by the late Barry Cullingworth, who believed issues were being dealt with on an "*ad hoc*" basis set against plans that were "*restrictive [...] containing little that is of a proactive nature*" (Cullingworth, 1997: 957). He felt the basic problem was that the land-use planning system was "*never designed to deal with the growth and change on the scale which has been experienced over the past 50 years*" (*ibid*: 945). He concluded that:

> *"Unfortunately, change is disturbing and, though some will obviously gain, those who lose will be vociferous in their opposition. It is the task of public policy to resolve such conflicts. Currently, government, at both local and central levels, is paralysed by fear of adverse reaction to positive policies. Yet, if responsibility is not to be abandoned, government should be more than an umpire among opposing sides in planning disputes: it should be an initiator of land-use plans and programmes for development." (Cullingworth, 1997: 958)*

Ten years later this quotation provides an appropriate indicator of issues to be addressed by this thesis. It refers to 'conflict', 'reactions', 'disputes' and 'change' then appeals to central and local government to be 'positive' and 'initiators'. Cullingworth evidently believed it was not only the purpose of planning to resolve issues but that it had the ability to do so, if empowered by government. Indeed, he saw most of the issues facing planning as being interconnected and was almost disdainful of many planning 'problems', which he felt were

"*perceptions of a wider vortex of issues*" (*ibid*: 950) and too often positioned in terms of desired answers.

A wide vortex of issues

What then were the conflicts, at 'both local and central levels' that needed resolution at the turn of the millennium, and to what extent were they interconnected as suggested by Cullingworth? At the time there seemed to be a wide range of issues circulating planning literature, at different levels and of different significance. The following discussion is intended to illustrate the wide divergence of issues then debated, yet retain the focus on strategic-local tensions. To achieve this, the writer selected three issues;

- the relationship between town and country,
- economic expansion versus environmental protection,
- the coordination of national strategy with local government policies.

Although representing substantial issues in their own right, by briefly reviewing some contemporaneous literature and noting linkages, they should enable the following to set the scene at the time the research was initiated.

- **Town and country**: The relationship between town and country has been noted to posess both strategic and local significance. At the start of the millennium, Frey (2000, 13) was concerned with the "*precarious relationship between city and country*", referring to an ongoing debate about the use of 'green belts'. He expressed his support for green belts, which acted to contain a city's development and preserve the adjoining countryside (*ibid*: 18, 24, 25), yet recognised 'the city' to be "*an arbitrarily defined political area*". He felt its relationship with the countryside could be beneficially altered by means of robust, long-term strategies which enabled planning authorities to share the same objectives, avoiding competition between themselves. The theme was that national strategies should overcome local disagreements and resolve local tensions. Such discussion of the urban-rural relationship has not been confined to the UK and was reflected in the European Spatial Development Perspective (ESDP) as proclaimed in 1999 (and further discussed in Chapter Two). The ESDP was said to be underpinned by the need for a new urban-rural relationship (Albrechts, 2001: 298), but its main focus was upon achieving economic growth in a sustainable manner; thus providing a link between town-country relationships and economic-environmental issues.

- **Economic expansion and environmental protection**: Albrechts (ibid: 297) described the developing European Union (EU) as having a "*real and unresolved tension between [...] economic intervention and the development of sustainable development, social justice and solidarity*". This had led ultimately to the ESDP and its three basic goals of relating to sustainability, competitiveness and socioeconomic unity. Sustainability in this context was delineated by the 1987 Brundtland definition as "*Development seeking to meet the need of the present generation without compromising the ability of future generations to meet their*

own needs." (Fairlie, 1996: 14, IAU, 2005). Owens (1994: 440) questioned if sustainability offered a new framework for planning or just "*fashionable language for a recasting of enduring conflicts*". She was sceptical about claims for it to be a new 'paradigm' (ibid: 450); believing environmental limits and capacity would prove to be "*a fundamental challenge to a market-led political economy*" (ibid: 451) and adding to the debate as to whether economic expansion and environmental protection were compatible. She had observed the enthusiasm generated by environmental issues within local government, which had been legitimised by reissued Planning Policy Guidance notes, but had reservations about the clarity of policy direction and commitment to sustainability; a view that linked environmental-economic conflicts with national-local government relationships.

- **National strategy with local government policies:** At the time of the ESDP publication, Vigar and Healey (1999: 153) were concerned with tensions between the sectoral role of national government, in providing functional services, and the role of local and regional government in the management of place and territory. They observed that unlike Europe, where "*more devolved modes of governance*" were growing, Britain had become more centralised, using "*quasi-autonomous agencies*" to manage devolution where necessary. This approach had caused increased fragmentation and pressures when integrating policies locally and they called for the "*articulation of strategies and the role of the development plan*". It was said the intention was to move from central and sectoral planning towards local and territorial planning, as expressed simply by Figure (1.1); that is from the top left hand quadrant to the bottom right hand quadrant. The theme was clearly focussed on resolving tensions between local and strategic planning activities through forming new linkages and methods of working.

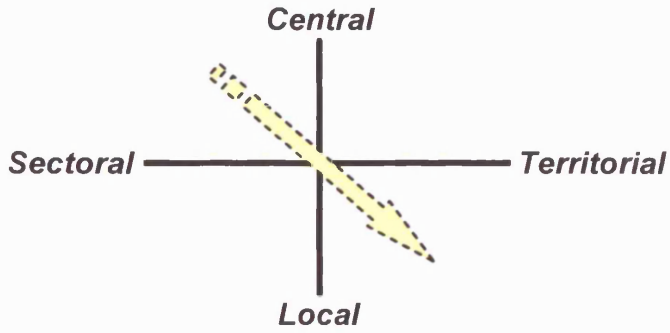


Figure (1.1): Tendencies in governance forms (adapted from Vigar, Healey, 1999: 154).

This brief review of three issues reflecting strategic-local tensions identified common linkages. Other linkages also existed. For example, returning to the role of national and local government, an illustration of the balance, or imbalance, between sectoral policies and local needs at the time, was that of 'affordable housing'. The pressures of affordable housing could also be related to rural-urban tensions. For example, Gallent *et al* (1998: 427) were concerned with a "*dualism in the housing market where [...] tenants, unlike owners, are arguably cast as second class citizens*" and yet housing projections predicted owner occupation would not be

sufficient to meet demand. They called for changes to the approach to social housing following the Thatcher years, including new incentives for private sector investment, continued negotiation of affordable housing quotas and stronger regional planning, reflecting a conflict between 'market-led' ideology and a belief in 'positive' planning. Equally, tensions between market-led ideology, as driven by national strategies, and impacts at a local level were not confined to housing and could be found elsewhere, for example providing a linkage with transportation and sustainability. Banister (2000: 113) accepted urban development policies should offer an "*attractive, affordable urban environment*", encouraging "*high-quality liveable cities*" as a means to reverse the outward migration of residents. This reflected an urban-country issue, and he went on to argue for reduced journey times and to propose the "*decoupling of transport from economic growth*". The aim was to support sustainable transport through a number of policy initiatives; including using transport related tax revenues to improve public transport, imaginative forms of car rental and carbon taxes to reduce carbon dioxide emissions. Plainly he felt decoupling transport and economic growth was a necessary step to relieving the tensions between them.

To illustrate a complete contrast to Banister's position and introduce the first aviation reference in this thesis, the relationship between air transport and economic growth was also discussed at the same time by Hart and McCann (2000: 875). They reviewed the future for Stansted Airport in terms of its significance to regional economic development, noticeably focusing on the economic, employment and transportation impacts of the airport's development, but without considering its environmental impact. Nor did they consider sustainability. Tomkins *et al* (1998: 243) had, two years earlier, presented a marginally more balance approach to the impact of aviation, its land-use needs and to some extent housing, when considering the case of Manchester Airport. Acknowledging the economic role of commercial airports they recognised the classic negative externalities of aircraft noise, increased road traffic, air pollution and congestion. Measurement of these impacts, in terms of noise and proximity to an urban area, was then undertaken using hedonic pricing methodology, based on the assumption house prices would reflect any negative externalities. Although they found significant variations within the immediate area surrounding Manchester Airport, their overall conclusion was that "*the closeness to the airport was a more important determinant of residential property prices than airport noise [...] it appears to be a positive rather than a negative attribute*" (*ibid*: 235) and that "*close proximity and access to associated transport infrastructure outweigh any negative impact*". What was not clear, however, was the degree that 'living under the flight path' differed from the idea of 'close proximity'. Significantly, neither analysis of Stansted or Manchester appeared to recognise Banister's underlying theme. Transport could not simply be viewed in terms of its localised economic effects, on jobs and housing; its continued growth was in direct conflict with the movement towards sustainable development as expressed by the ESDP.

The foregoing discussion, which ranged through issues of green belts, sustainability, transport and housing, was intended to illustrate that just by briefly examining three particular planning issues, related to strategic-local tensions, it was possible to understand why

Cullingworth (1997: 950), in the period leading up to the research, saw many planning problems as a part of a wider vortex of issues. He believed the 'problem' of transport was inextricably linked with housing and town centres and so questioned why transport and land-use planning had been managed separately. His conclusions were: that housing, economic activity and transport should at least be considered together; greater use should be made of joint public-private initiatives and the compulsory powers of land acquisition; environmental impact assessments should focus upon the selection of the most appropriate sites; regional governance should be advanced; and planning should be adequately financed to cope with the changes ahead. These recommendations encapsulate the debate at the time the research was initiated, whilst also touching on the issues discussed; the relationship between town and country, economic expansion versus environmental impact, and coordinating national and local government policies.

Events since the 2002 Green Paper

In the years that followed the 2002 Green Paper, the UK government digested the concerns and recommendations of academics, practitioners, developers and other stakeholders, before approving the final version of the 'Planning and Compulsory Purchase Act (2004) for England and Wales'. The new Act reflected the language of the ESDP (a point that will be explored further in Chapter Two), whilst also introducing a new set of planning acronyms; it set up a process whereby Regional Planning Bodies (RPBs) would prepare Regional Spatial Strategies (RSSs) to provide a long term vision of development; local authorities would then prepare Local Development Frameworks (LDFs), to translate vision into short-term actions, and Statements of Community Involvement (SCIs) to provide a framework for resolving shared concerns and allow greater public participation. The Act also included requirements for Environmental Impact Assessments (EIAs) concerning major infrastructure projects and sustainability appraisals (SAs) when developing both regional strategies and local frameworks. It was supported by a reform programme, aimed at the education of a new generation of planners in the new culture (ODPM, 2005).

The Campaign for the Protection of Rural England (CPRE, 2004) in association with the Friends of the Earth and Transport 2000, generally accepted the new Act when it became law, noting there had been a total of thirteen key changes since the Green Paper, including the withdrawal of plans to transfer major infrastructure plans to "*unelected regional bodies*". However, they still had deep concerns over the removal of County Structure plans and "*the overwhelming thrust of the Act [...] to centralise planning [...] sucking up power to regional and national levels*". This reaction implied that they did not see the Act's emphasis on strategic links with local authorities and proposals for community involvement, would necessarily move planning towards Vigar and Healey's lower quadrant, as shown in Figure (1.1). Developers were equally critical, suggesting it would fail to deliver the efficiency, speed and predictability that it promised, largely because the transition away from old-style development plans would generate uncertainty and delay (Martineau, 2004). Two years later, Allmendinger and Tewdwr-Jones (2006: 16) none the less described the 2004 Act as a major step towards a

much improved process, which had revitalised planning and completely transformed England's policy and strategy making functions.

Whilst accepting it may have been a major step forward, the planning process evidently remained a controversial issue for national government. In 2005 Gordon Brown, as the Chancellor of the Exchequer, announced his intention to introduce a further set of reforms; even though the 2004 Act was still being introduced, with the rewriting of Planning Policy Guidelines (PPGs) into Planning Policy Statements (PPSs) and the development of approved RSSs. He commissioned two major reviews by Kate Barker aimed to improve planning's efficiency, flexibility and responsiveness, such that it "*can better deliver economic growth and prosperity alongside other sustainable development goals*" (Barker, 2006: 10). This objective echoed one of the main concerns the ESDP was intended to address nearly ten years earlier, showing the tensions between economic growth and environmental protection remained. The Chancellor was not alone in expressing concerns about the planning process. Allmendinger and Tewdwr-Jones (2006: 12) identified several issues. They questioned if ownership for planning decisions will improve, whether the professions will enable planning's legitimacy to increase through more democratic processes and also, if central government will delegate responsibility, or continue to feel accountable and retain control. Healey (2006: 76) equally expressed concerns. She suspected those at a local level may continue referring upwards as a means of ensuring protection against legal challenges and that planning reform may be lost when competing in other policy arenas. Echoing the concerns of the CPRE, she highlighted ongoing concerns about how planning might better integrate local with strategic issues; again questioning if the current reforms would manage to move the focus to the bottom right hand quadrant of Figure (1.1).

As with the discussion of strategic-local tensions that existed at the time the research was initiated, after the empirical work has been completed, there clearly remained a similar set of ongoing concerns. The CPRE were worried about the effects on the countryside due to changes in the linkages with central and local government, Gordon Brown was concerned with adopting a national strategy that would address issues of economic expansion and environmental protection, whilst academics were concerned about whether or not the reform of the planning process would deliver their expectations.

Are past concerns still justified?

The foregoing suggests that issues felt at the time the research was initiated have remained issues, despite a 'fundamental' review of planning law and 'transformation' of English policy and strategy. The 2004 Act, as argued by Allmendinger and Tewdwr-Jones may have represented a major step in the right direction, but as Chapter Two will describe, planning has a long history of change. So, it can be expected to continue developing, with the need to take more steps forward. It would seem that core issues and tensions such as those between town and country, economic expansion and environmental protection, national and local governments have an enduring quality. The issues remain worthy of investigation, even though the legislative background has changed in the meantime; suggesting the research

outlined in this thesis remains relevant to the current planning environment. As will be discussed in Chapter Two, Healey (1998), but also others like Albrechts (2001), Wong (1998), Kunzmann (2001), Tewdwr-Jones et al (2000) and Yiftachel, Huxley (2000) have sustained Cullingworth's earlier call for change. They have proposed alternative forms of planning, of interest to academics, and presented them as possible models for future reform, in the belief they would resolve long term issues. This thesis humbly aims to contribute some empirical evidence to support such reforms.

In this section the background of the research has been outlined. A new government had promised fundamental change to a system widely criticised for its inability to change with the times and the research was initiated because there were substantive issues facing planning. Despite the legislative changes which have occurred since the research started, these issues have remained; albeit in changed circumstances and possibly in different ways. Consequently this section, justification for the research, suggests there remain reasonable grounds to hold the research was warranted. Substantive issues needed to be better understood at the time, and they still need to be investigated, as part of a process of improvement in Britain's planning policy and practice.

1.3 Choice of case study subject

This section will introduce the basis of the research's link with general aviation, leaving a deeper discussion of methodological issues including positionality and reflexivity to Chapter Three. It will first review selection criteria for choosing case study subjects; then explain the connection with general aviation, how previous research had suggested it was a suitable case study subject, to what extent the issues previously identified support this suggestion and how well general aviation fitted criteria for selecting a case study. Having discussed the choice of case study subject, the subsequent section will describe how the main research question emerged.

In terms of selection criteria for case studies, it has been said the choice should be made on the basis of a subject's ability to explain, and not just its representational ability or typicality (Mitchell, 1983: 193, Stake, 1995: 4). Stake added that the ease of access and the willingness of participants were important in this respect, although uniqueness and context also need to be considered. Yin (2003: 40) had similar views and identified five rationales for selecting a single case study subject, one of which was the subject's typicality, although he precludes this classification by drawing the distinction between analytical and statistical generalisations (*ibid*: 32). The other rationales identified were a case's unique, critical, revelatory or longitudinal qualities. The following, after explaining the research's connection with general aviation, will suggest that although Stake's 'ease of access' was the core reason this thesis used general aviation as a case study, it also fitted Yin's rationales for a 'typical' and 'revelatory' selection.

The connection with general aviation

The link to general aviation reaches back to the late 1990s when the Economic and Social Research Council (ESRC) agreed to fund research by three University of Manchester academics into the possible uses of used and disused aerodromes (Gallent, Howe, Bell, 1999). A final report was issued in April 1999 entitled 'Alternative Land uses on Small Rural Airfields' that was supplemented by a number of articles, including publications in 'Progress in Planning' (Gallent *et al*, 2001) and 'Regional Studies' (Gallent, Howe, 1998).

The ESRC research was initiated to explore the potential of used and disused flying sites to meet the need for housing land, but it diverged from this original aim and focussed upon planning's treatment of flying activity. A concluding paragraph suggested there was a general interest in the subject and invited others to continue research:

> *"This project was intended to be a preliminary examination of planning practice and local concerns relating to the use and reuse of small airfields. [...] there was a belief that the problems facing airfields – in terms of satisfactory planning practice – were both significant and generally neglected. [...] many planning professionals registered their interest in the overall findings of the study. [...] we hope to promote the research further and reach the widest possible audience." (Gallent et al, 1999: 19)*

Elsewhere in the report, it put forward the idea that land-use changes experienced by general aviation aerodromes had caused them to become "*microcosms*" of issues generally facing planning (*ibid*: 13). A review of the report and related articles revealed a range of different issues said to be experienced by aerodromes, four of which are summarised below to illustrate their general nature and relevance to a discussion of strategic-local tensions:

1. The researchers (Gallent et al, 2001: 209) investigated the policies of county councils and found they were "*rather too generalised to be of great use in determining the future of individual sites*" and seemed "*unlikely to restrain district councils from pursuing their preferred approaches to particular sites*". This pointed towards a possible issue concerning the effectiveness of local strategic plans at a local level.

2. At the district council level the researchers (*ibid*: 209) found planning conditions were the main instrument of control, although not for sites which predated the 1947 Town and Country Planning Act. At sites where conditions had been applied, these were felt to be "*fewer and looser*" than would be expected at new sites, although at some they were felt to be unreasonable, unenforceable and possibly beyond the district's legal powers. This led to a general finding that conditions had been irregularly applied; questioning if national guidance processes ensured uniformity of treatment at local levels.

3. The local authorities were asked to provide an opinion on residents' views about flying. It was said residents were "*concerned about noise, safety and intensification*" and authorities described flying as an activity "*which – at the very best – is merely tolerated*" (*ibid*: 227). The conclusion was that few planners saw any economic benefit to local communities and yet, in contrast gave more attention to noise and safety complaints. It raised a question of how of local planners' might ensure the impartiality expected of them.

4. The researchers (*ibid*: 228) uncovered cases of severe local resident opposition, which "*as a result of intervention from local councillors*" had resulted in a high level of planning application refusals. However, these refusals were subsequently reversed upon appeal, suggesting some authorities decided to distance themselves from difficult issues by allowing the planning inspectorate to adjudicate instead.

Despite these findings, it was said the research "*uncovered little evidence of planning officers seeking to close sites and there seemed to be an acceptance that flying was a legitimate activity, worthy of at least some protection*" (ibid: 254). Concerning the possible re-use of sites (the original theme of the research), it also found redundant flying sites were not as expected, a ready source of housing land, as they were generally located in places where sustainability arguments mitigated against their use.

In summary, the four points used to illustrate strategic-local tensions suggested:

- county council policies were not always effective,
- existing development controls may have been inconsistently applied,
- local planners had a difficult task to remain impartial under pressure from residents,
- through not accepting planning recommendations, local politicians had sometimes caused additional cost and delays in the planning approval process.

Rationales for the choice of case study subject.

The above preliminary review of the ESRC research findings was intended to show, as did a similar review at the time, that general aviation flying sites can possess a range of tensions and conflicts which might help develop an understanding of issues facing planning. On this basis it was possible to refer back to the three issues previously selected in Section 1.2, and test if relevant inferences might be drawn from the ESRC study. The following points were noted;

Town and Country: Aerodromes were seen as an intrusive activity, often located in rural situations but also on the urban fringe, which although tolerated as legitimate land-uses, might illustrate wider tensions between town and country.

Economic expansion and environmental protection: The development of aerodromes appeared to have been tightly controlled and was perhaps illustrative of the dilemmas faced by planners when balancing economic expansion against environmental impacts.

National strategy and local government: The process from strategic plans / national guidance to local interpretation / implementation seemed, at least in some cases, to be ineffective, inconsistent and inefficient. It suggested aerodromes could provide appropriate material concerning the coordination of national and regional strategies with local practices.

These conclusions, drawn from wider planning issues and an analysis of the ESRC report, when related to the earlier discussion of selection criteria, supported a view that

general aviation, as a case study subject, indeed possessed the potential to be a representative case for the way planning acted towards other industrial sectors. As such it might be described as an example of a case study chosen for its 'typicality'. It could not be said to be either a 'critical' or 'unique' case, that could test a well formulated theory or explore a very rare issue (Yin, 2003: 40) - even though as Chapter Three outlines, those in the industry felt it was both. Instead, Chapter Three will demonstrate there were grounds to regard general aviation as a 'revelatory' case; that is one where an investigator has the opportunity to explore issues found elsewhere but at a level previously inaccessible to scientific investigation (*ibid*: 42). However, whatever class it may represent, general aviation was not chosen on the basis of selection criteria, from a range of similar industrial sectors to be the best one to use as a case study. For the reality was the connections forged between the ESRC researchers and contacts within the flying community ultimately led to the research being based on general aviation rather than the other way around. It is possible to rationalise this point, for as Stake observed, access to a case study subject and the willingness of its participants are important gateways to gaining understanding. Consequently, it is simply suggested here that whilst general aviation was self selected due to its accessibility, it also matched Yin's selection criteria on the grounds of potentially being both typical and revelatory.

The foregoing has explained that although the general aviation industry was predetermined as the case study subject, its selection could be rationalised and that it was an appropriate subject for examination. The ESRC study had previously identified general aviation aerodromes to be 'microcosms' of past land-use policies and a preliminary review confirmed them to be rich in possible sources of tension, mirroring the wider planning conflicts discussed earlier and so suggesting they would provide insight into strategic-local conflicts and how they might be resolved.

1.4 The basic research question

On the basis that a study of the general aviation industry's relationship with land-use planning was acceptable to both university and sponsors - the General Aviation Awareness Council (GAAC) and the Department for Transport (DfT) - the research was initiated in September 2001, with a broadly defined aim "*To significantly increase the body of knowledge about GA in the UK; its current infrastructure, role within the economy and relationship with England's planning process*". The research activity itself was proposed on very similar lines to the ESRC project; a precursory investigation of secondary data, a survey of local authorities and field visits to both flying sites and local planning authorities. In effect it was seen to be a 'testing out' investigation of previous research, where 'testing out' was taken to mean finding the "*limits of previously proposed generalisations*" (Pugh, Phillips, 2005: 45) and would be aimed at verifying findings relative to the treatment of active aerodromes by the planning process. Chapter Three will discuss how the 'testing out' approach ultimately developed to address particular questions left unanswered by the original research.

During the early stages of the research several possible questions flowed from the research aim, however, as other researchers (Bulmer, 1969: 48, Innes, 2003: 214) have

observed and acknowledged, the main line of enquiry may not emerge at first and will often replace the original set of questions. This research has empathy with that observation. It was after the research was underway that a basic research question emerged, through a process of assessing the most suitable issue to be investigated, based on the case study attributes, whilst remaining reasonably consistent with the original research aim and the approach of 'testing out' the ESRC project's findings regarding active general aviation sites.

The overview of the ESRC research in the foregoing section showed general aviation aerodromes possessed spatial characteristics that might be explored to better understand strategic-local tensions. It found activity at aerodromes appeared to be tightly controlled, reflecting the balance struck between economic benefits and environmental impacts, and that local planning practices towards general aviation did not necessarily reflect wider planning strategies or national guidance. Initially the research direction followed the first point, that aerodromes were essentially urban activities set in rural locations, and this inherently raised tensions, which if resolved would benefit all stakeholders. It seemed the main research question might be aimed at evaluating the economic benefits of small aerodromes, in particular the highly localised economic effects upon residents and businesses. This was on the basis the local environmental impacts were generally well understood whereas the economic ones were not. However, it was realised such a methodology would have departed significantly from the declared research aim and approach, which was to establish a broader view of general aviation. It would probably have required a detailed embedded analysis of a few individual sites in terms of the complete range of economic impacts, followed up with interviews of all participants and stakeholders, leaving little research time for a wider local authority survey and the proposed 'testing out' of previous research. In the event the research question addressed in this thesis took much longer to emerge that was originally envisaged, even though it was always lying beneath the surface and helping to set the research direction.

Its emergence followed a comprehensive re-evaluation of the issues, which led to an alternative approach, less focussed upon general aviation issues and more on planning issues; it was aimed at exploring the wider issue of how government sets the framework for local authority control. In this context, town-country and economic-environmental tensions were seen as outcomes - how well regulatory frameworks were set and local practices implemented. For example, as mentioned earlier, Frey (2000: 24) had felt national strategies should overcome local disagreements and resolve local tensions. If so, town-country tensions were a reflection of how well national strategies connected with, and related to, local concerns. Equally tensions generated by differences between economic forces and environmental concerns were also taken to be a result of how these forces and concerns were orchestrated by regulatory frameworks. As cited previously, Owens (1994: 440) questioned if 'sustainability' could provide a new framework for planning. At the time planning policy guidance notes (PPGs) were being revised to integrate environmental concerns into planning policies following the 1990 Environment White Paper. In particular PPG1 was revised to ensure development plans contributed to the aim of making development and growth

sustainable (*ibid*: 441). Clearly it was not so much a question of whether sustainability could provide a new framework but if the new framework would be successful, given previous frameworks had not resolved earlier conflicts. Expressed another way, the question was 'how effective was government in designing solutions to problems and how effective was it in implementing them?'. This question struck a chord with the third planning issue previously identified, the coordination of national strategies with local government policies. It suggested the first two issues selected, about town-country relationships and economic-environmental balances, were about finding solutions to specific problems, whilst the third issue was about implementing solutions generally. The third issue appeared to underline the other two, echoing Cullingworth's observation about a vortex of issues. It was concluded a range of planning 'problems' might remain significant issues, unless the process for coordinating national strategy with local government policies was also reformed.

In early 2002, when the Green Paper was being debated, there was a focus on this third issue, but it was not known if the reform of planning regulation would necessarily improve the conflicts and tensions between strategic needs and local concerns. This ultimately gave rise to the basic research question which had lain hidden during the early stages of the research:

Will future planning legislation and processes provide a more effective, less conflict laden process for implementing national and regional strategic objectives at a local level?

Five years later, this thesis will attempt to express a view in answer to this basic question, but as will seen in Chapter Two, the process of refining the key issue to be addressed did not end with this basic question. Chapter Two will follow a process of understanding and contextualising the basic question; by disaggregating its meaning, looking at planning's *raison d'être*, its history, the factors that have shaped it, the promise of new approaches, the nature of conflict and the role of public interest, and how decision making, politics and British legal processes are all tightly bound together in a landscape that affects the relationship between strategic objectives and local implementation. From this wide ranging brew of factors, it will be shown how a more refined research question emerged and how this enabled three research hypotheses to be developed, and then explored during the balance of this thesis.

1.5 Structure and format of the thesis

In this chapter the main theme of the thesis, to examine strategic-local tensions in the planning process, has been introduced. By a preliminary review of the literature at the time the research was initiated and as it existed after the empirical work was completed, it considered whether or not the research was justified. The conclusion was that it could be justified, since the past issues discussed remain current issues. The choice of general aviation as a case study subject was rationalised against the reality it was selected because it was accessible.

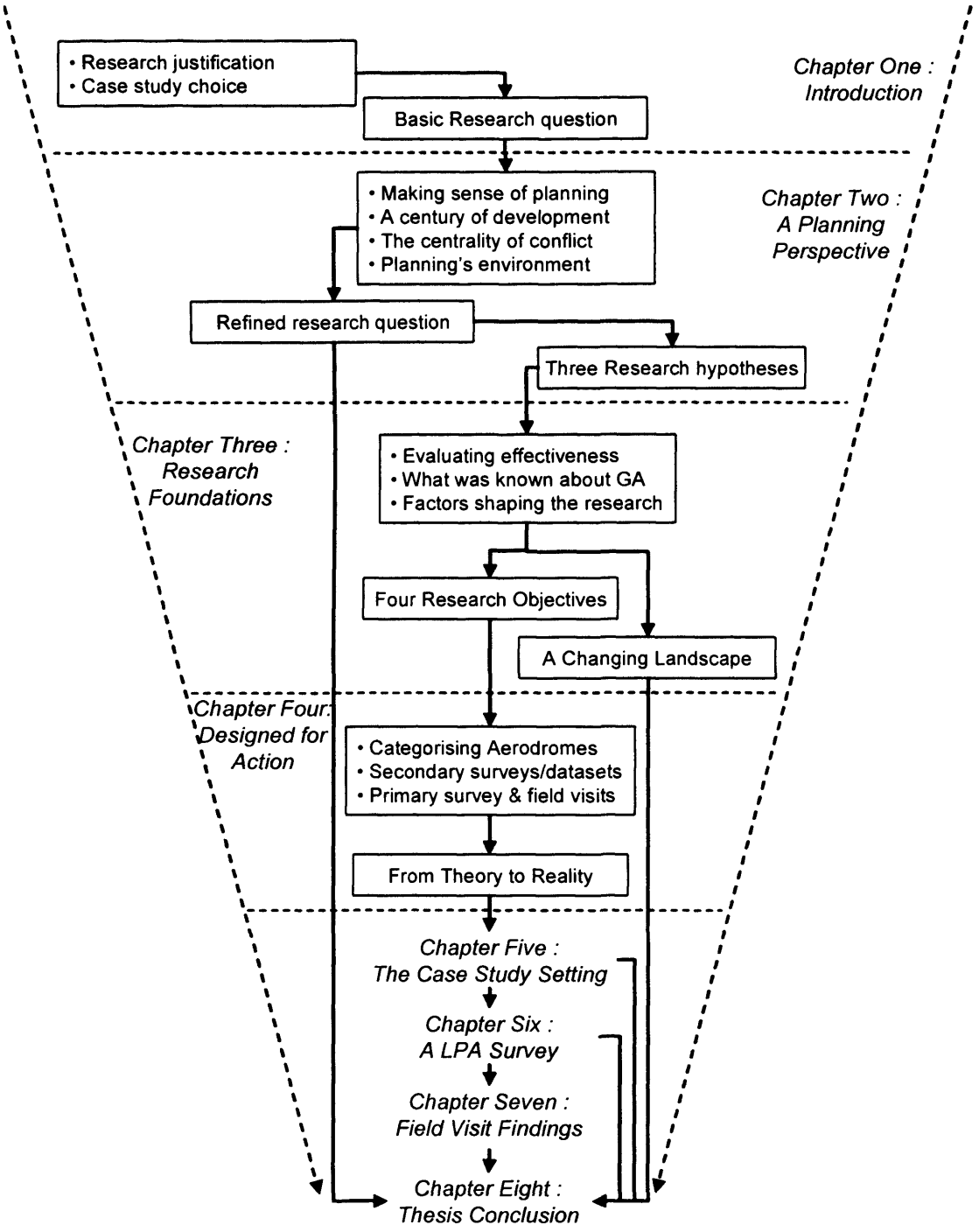


Figure (1.2): The Chapter outline: from introduction to conclusion

The balance of the thesis will take a conventional form as it narrows down from the broad nature of this chapter to specific issues and conclusions, as illustrated by Figure (1.2). As previously explained, Chapter Two will take the basic question posed by this chapter and via a wide ranging planning perspective, expand upon the literature introduced in this chapter to outline the meaning of planning, its history and to discuss issues, like the centrality of conflict in planning and how this might be influenced by the socio-political environment in which planning operates, to arrive at a refined research question and three main hypotheses. As Figure (1.2) illustrates, Chapter Eight will ultimately return to the basic and refined research

questions, leaving the intermediate chapters to focus on the three hypotheses. The purpose of Chapter Three is to provide a sound foundation for the research. It carries forward the three hypotheses and continues the review of literature, by exploring the processes involved in planning and developing the broad methodology, including issues of reflectivity and bias, before identifying key four research objectives and then reviewing the changing landscape of planning reform as a background to the final conclusions in Chapter Eight. Chapter Four develops the plan to match the four objectives and outlines the methodology involved. Chapter Five summarises secondary data that was gathered as a setting to the case study, whilst Chapter Six describes the survey of English local planning authorities and Chapter Seven explores the findings of both Chapters Five and Six in the context of field visits that were subsequently undertaken. Finally, Chapter Eight draws upon the conclusions of the case study investigations and four issues that had emerged, to reflect on the basic and refined research questions, and then generalise the findings to wider planning concerns that might exacerbate strategic-local tensions.

CHAPTER TWO: A PLANNING PERSPECTIVE

This chapter continues the review of literature to establish an historical background to planning in Britain and explore the factors which have shaped planning, including societal and political changes. It then refines the basic research question, identified in the first chapter, before developing hypotheses that will be examined in subsequent chapters.

2.1 Refining the basic question

The purpose of this chapter is to continue the discourse started in Chapter One and firmly ground the thesis within literature. It will provide a wide ranging perspective of planning and refine the basic research question, as identified in Chapter One, before developing hypotheses that will be pursued in subsequent chapters, in line with Figure (1.2). In Chapter One the existence of strategic-local tensions was introduced and exemplified by references to informed debate, both at the time the research was initiated and since. Literature was also used to discuss the appropriateness of general aviation as a case study subject and to form the basic research question, which asked if current planning reforms would improve the implementation of strategic objectives. In this chapter, literature will be used to locate the issues raised in Chapter One more completely, whilst enabling a clearer explanation of several planning related terms, which have of necessity been used in the preceding chapter. The intent will be to explore the relationship between strategic and local interests, since without a clearer understanding of the factors which influence the relationship, it would be difficult to assess if current reforms would, or would not, provide a more effective process.

The starting point will be to consider planning's role via an analysis of government published objectives. Following this opening attempt to define planning, the chapter will place British planning in context by outlining its historical background and how events elsewhere have shaped and continue to shape its development. Although this may appear at first to be a wide ranging exploration of factors that affect planning, its twin purposes will be to explore, following on from Chapter One, how the framework for local authority control has developed and then to illustrate how strategic initiatives have arisen from a diverse spectrum of needs, often at an international and global level. The focus will then narrow to a discussion of conflict and the use of public interest arguments in determining planning's *raison d'être*. This will lead to an examination of the 'environment' within which planning operates, including the way that decisions are made, the role of society, power, politics and democracy, and how the search for flexibility in planning decisions has been enshrined in British law and is now crucial to the relationship between national and local governments. The uniqueness of British planning will be explored relative to alternative planning processes and conclusions reached about the role of local discretionary powers in enabling or limiting change. By examining the literature, in terms of strategic-local tensions, as contextualised within the development of planning, the chapter will close by refining the research question raised in Chapter One and suggesting the main thesis hypotheses, which will then be explored in the following chapters.

2.2 Making sense of planning

In this section, the intention is to arrive at a broad understanding of what planning means, in a land-use sense. As will be described, there are multiple opinions about what is meant by planning, so discussion will first centre on the general meaning of the term and then to its specific meaning, as a way of exploring how strategic-local tensions might relate to planning's objectives.

Planning is a term which, even in this setting, exists in a variety of specific forms; for example, 'town and country planning', 'regional planning', 'land-use planning', 'spatial planning'. Whilst each clearly has its own particular meaning, it might be assumed they shared a generic understanding of the term 'planning'. Planning literature interestingly appears to struggle with providing a simple description of what it might be (Davidoff, Reiner, 1973: 11; Banfield, 1973: 139; Faludi, 1986: 9), and often seems to rely on dictionary definitions to explain the terms used. Peter Hall (2002: 1) has resorted to the same approach, admitting it was an "*extremely ambiguous and difficult word to define*", before depicting planning as an activity which may involve "*a drawing [...], a method of doing something, or an orderly arrangement of parts of an objective*". The situation seems more ambiguous and complex when authors associated 'planning' with other terms like 'theory', 'ideology' and 'model' (Thornely, 1993: 29; Thomas, 1997: 13; Sager, 2001: 630). Yiftachel and Huxley (2000: 907), noted the same persistent confusion, arising from what is 'theory' and what is 'planning', except they proposed planning was (based on Lefebvre's definition) "*the public production of space*". The difficulty with the approach taken by many planning authors may be that the generic meaning of the word 'planning', as for example suggested by Hall, refers to almost any type of human activity and certainly many different forms of planning in both public and private institutions and businesses, yet it does not convey any sense of the specific activity within such organisations. Faludi (1986: 115) reaches a similar position after an extensive philosophical analysis (but without resorting to the dictionary) by concluding "*planning has many meanings depending on the problem which one wants to tackle. [...] I have opted for the view of planning as decision-making*".

Consequently, at this early point in the chapter, by combining Hall's and Faludi's comments, it may be concluded that at a generic level, planning appears to be aimed at achieving defined objectives which involve a methodical approach to decision-making. As possible sources of conflicts, each of these three elements, objectives, decision-making and methods are of interest to the focus of this thesis. Accordingly, the following will first explore planning's objectives; leaving a later section to return to issues of decision making and Chapter Three to consider planning's methods, as an integral part of developing the thesis methodology.

Planning's objectives

Just as authors appear to struggle when defining the term planning, they also appear to have different views about its objectives. Gilg (2005: 57) analysed over a 1,000 policy proposals in the 1990's and concluded there were "*an enormous number and diversity of*

possible planning objectives". In part this may have be due, as Vigar *et al* (2000: 9) noted, because the planning system itself allowed a continual reinterpretation of its purpose; suggesting if its purpose changed with time, so would its objectives. Thomas (1997: 12), when seeking to bring some clarity to the issue, analysed the stated purposes of planning as published by the government bodies responsible for planning in Wales, Scotland and England, and developed a useful summary of planning's objectives. Because it was felt it might add to the earlier generic understanding, Figure (2.1) was developed showing Thomas's list, involving twelve main objectives, in which generic and specific objectives have been identified by the writer. The classification was achieved by questioning whether an objective described a planning activity, or an idea that might apply to other government activities. For example, given planning is a formal state activity, it was considered reasonable to expect it to be in compliance with normative principles of public service (to be efficient, effective, accountable, informed, minimise conflict etc.), so objectives directed at these expectations were identified as 'generic'. Using this process, five of the twelve objectives were thought generic, leaving the remaining seven to provide a more focused understanding of planning.

	Objective	***Generic***	***Specific***
1	Balance protection of natural and built environment with pressures of economic and social change.		✓
2	Set land-use framework for economic development		✓
3	Make things happen at the right time and the right place	✓	
4	Meet the need for housing		✓
5	Facilitate accountability	✓	
6	Protect landscapes		✓
7	Control the external appearance of developments		✓
8	Secure efficient use of land in the public interest		✓
9	Resolve conflicts	✓	
10	Act as a forum for public debate	✓	
11	Be mindful of global, international, regional and local issues	✓	
12	Ensure sustainable development		✓

Figure (2.1): Twelve planning objectives (adapted from Thomas, 1997, Gilg, 2005)

Several observations might be drawn from Thomas's analysis and the writer's separation of objectives into generic and specific classes, as in Figure (2.1). However the key observation appeared to be an apparent overlap between objectives; perhaps because the list was compiled from different government sources and at different times. For example, Objective (1) was similar to Objective (12) whilst also having common characteristics to Objectives (2), (6) and (7). The underlying message and core themes drawn from the specific objectives was however, that at least during the 1990s, planning had been about providing a framework for the use of land, which would address the nation's future need for housing and economic development, whilst also protecting the natural and built environment. As such the core themes appeared to echo the concept of sustainability, as first introduced in Chapter One, and listed as Objective (12) by Thomas. This suggests that when separated from the noise of generic objectives, the 1990's objectives were developing an underlying sustainability agenda, that in recent times has become much clearer. For example, PPS1 (CLG, 2005: 2) describing sustainable development "*as the core principle underpinning planning*". At the

same time, the statement appeared to highlight several basic issues that might surface as inherent tensions and conflict within planning due to opposing objectives. For example, was there agreement upon the 'efficient use of land' and on the 'future need for housing and economic development' and if so how could they be reconciled with 'protecting the natural and built environment'? Thornley (1993: 33) drew attention to a similar set of conflicting and ambiguous objectives in earlier decades and so provided additional evidence of a consistent theme of conflicting objectives within planning.

Consequently, a conclusion was reached that although planning's high level objectives echoed the concept of sustainability, they also possessed qualities that might in some circumstances become sources of conflict and disagreement; suggesting planning had been handed a difficult task, which inherently involved wrestling with internally conflicting objectives.

Encapsulating planning

In an attempt to make sense of the wide variety of opinions about what planning should be and do, the foregoing has examined the generic and specific meanings of planning, based on academic views and government's objectives. By considering the generic meaning of planning it was found that as an activity it involved methods, decision making and objectives; each of which might give rise to tensions and conflicts. An analysis of objectives provided a clearer statement of what planning might mean, and suggested that whilst planning's objectives reflected the sustainability agenda they also possessed inherent tensions. Since any issues between objectives, modes of decision making and planning methods have yet to be explored, it cannot be said the discussion so far wholly encapsulates what might be meant by planning. But, it has possibly captured the normative essence of the planning, moving beyond a simple generic definition, such that the following sections may better contextualise strategic-local tensions and provide a landscape in which to set the research hypotheses.

2.3 A century of development

It would be difficult to contextualise strategic-local tensions without some historical perspective, since, as will be shown later, the way planning has developed ultimately shaped the strategic-local relationship. Consequently this section, a century of development, will not only outline the historical roots of British legislation but consider international sustainability agreements and European planning directives relative to calls for planning reform; given each represents a strategic initiative that may have implications for local implementation.

An evolutionary process

The foundations of British planning can be traced back to the Middle Ages (Booth, 2003: 28) through regulations concerned with disputes between neighbours, the establishment of leasehold and trust arrangements to restrictive covenants and Acts of Parliament concerned with public health. The first significant attempt to control national development standards did not occur until 1858, with the Public Health Act (Booth, 2003: 16; Gilg, 2005: 5), yet it was not

until the first Housing, Town Planning Etc. Act was passed by Parliament in 1909, nearly one hundred years ago, that it could be said modern state regulation of land-use was initiated. The 1909 Act established a legal right for councils to intervene in, and plan, urban development and it was intended to put an end to overcrowded industrial cities and establish new settlements. The Act was progressively strengthened between the two World Wars in 1919 and more decisively in 1932 (Hall, 2002: 23; Cullinworth, Nadin, 2006: 16-20). The period after the Second World War was a time of rapid political, social and economical change, giving rise to the Town and Country Planning (TCP) Act of 1947. The 1947 Act was the foundation of the modern system (Booth, 2003: 15) and an act described as the most significant step towards the total control of land by any UK government (Fairlie, 1996: 8; Pennington, 2000: 27); or as Gilg (2005: 9) commented "*the introduction of proper planning*". With the Agricultural Act of the same year, it ultimately enabled the designation of Green Belts, Areas of Outstanding Natural Beauty (AONBs) and the National Parks, whilst making all but agricultural land subject to planning permission (Cullingworth, Nadin, 1994: 10). The key aspect of the Act was that it nationalised the right to develop land (Cullingworth, 1997: 946; Hall, 2002: 72). Public participation was perfunctory and local authorities were expected to be developers and to adopt a 'positive' planning approach to land it purchased, whilst the private development of land was to be treated 'negatively' (Gilg, 2005: 10). It was focussed on the 'proper distribution' of industry, the 'containment' of large cities and the creation of 'new towns', typifying what has been termed '"*the master plan or blueprint era*" (Hall, 2002: 211). The changes were at first accepted in post war Britain by a people accustomed to regulation and control. But in time, support fell away as resource constraints placed severe limits on what could actually be achieved and it was said to have focussed upon regulation, rather than plan making, in face of the demands generated by a changing society (Cullingworth, 1997: 947).

Indeed, this was reflected in both the procedural and administrative focus of development control, which drew on a "*deterministic approach of producing a prescriptive fixed master plan*" (Wong, 1998: 222). In the 1960s, the 'blueprint era' and 'determinism' gave way to 'rationality' and the 'systems planning' period. A distinguished campaigner for the new rationality was Lowry, who developed a land-use model based on economic and social science theory (Coppick, Duffield, 1975: 193), which became a keystone of modern land-use planning, exemplifying both the shift towards rationality and the emerging use of computers (Lowry, 1964: 21; Hall, 2002: 217). The beginnings of mass computing enabled planning theory to develop the systems approach (Wong, 1998: 222) and an array of other 'rational' techniques encompassing goals, objectives and targets based on quantitative analysis, forecasting and monitoring (Hall, 2002: 212-218). Yet in practice, it was said planning became increasingly "*removed from the political and economic realities of urban and regional development*" (Yiftachel, Huxley, 2000: 908) and cultural shifts in the 1960s and 1970s resulted in sustained attacks (Thornley, 1993: 27; Van Driesche, Lane, 2002: 137). The belief in a "*single, universally applicable good*" was challenged and the emphasis shifted to "*locality and particulars*" (Healey, 2003: 105). Rationality was said to be over reliant on objective

techniques; producing grand models that ignored broader social values and supporting the *status quo*, business interests and the forces of capital.

As will be discussed later, the incoming Conservative Government of 1979 recognised these broad failings and attempted to replace formalised regulation with market mechanisms, emphasising supply-side, free market and competitive forces (Wong, 2002: 293). Yet the Conservatives found it difficult to reconcile planning with market ideology, such that their policy was described as a bizarre mix of deregulation and centralisation (Cullingworth, 1997: 948; Abram, Cowell, 2004: 211). Local authorities were criticised for not supporting the changes, users found the system slow and expensive and results were described as ugly and careless (Lock, 2002). At the same time there was growing social pressure for participation in the planning process. The transition from the earlier 'systems planning' period had given way to what Hall (2002: 211) has described as "*continuous planning in conflict*". This emphasis on conflict was recognised by Healey and others including Forester, Innes, Hoch, Baum and Hillier (Haughton, Counsell, 2004: 41; Allmendinger, Tewdwr-Jones, 2002: 5). In the 1990s they proposed a more inclusive approach towards what was called 'communicative' or 'collaborative' planning (Healey, 1998: 1-21; 2003: 104, Gilg, 2005: 170).

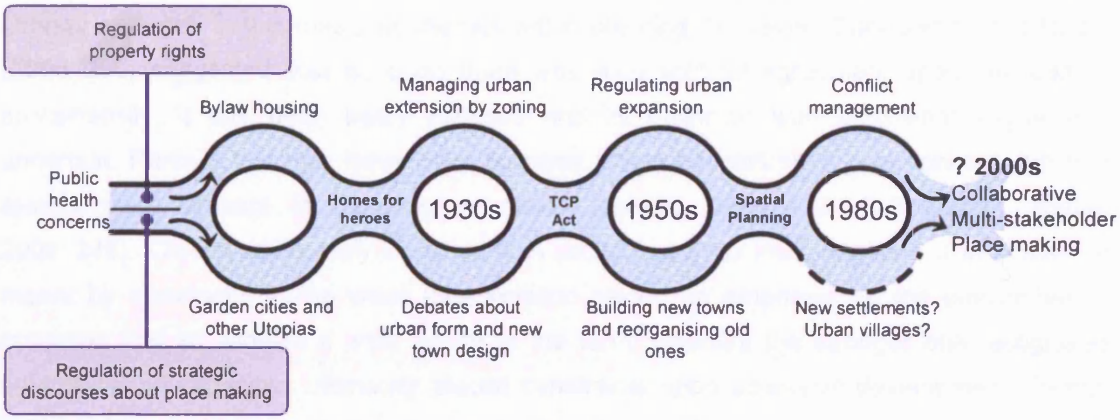


Figure (2.2): Evolution of British regulatory purposes (adapted from Healey, 1998)

Drawing upon earlier work by Habermas and Giddens, as will be described later in this chapter, Healey identified the two key regulatory purposes of planning; that of property rights and that concerned with promoting broader social, economic and environmental objectives. Figure (2.2) has been based on her pictorial illustration of the events, over the past one hundred years, by which she described how these two regulatory streams have been repeatedly separated and then argued they were most effective when closely integrated. Her hope was to evolve a new form of planning in the 2000s, bringing together once again these two streams of planning regulation (Healey, 1998: 11; 2003: 117). Figure (2.2) also highlights how planning had undergone considerable change over the past century; reflecting the changing nature of governments, from the socially aware, post war periods to the reforming, economically aware, years during the last quarter of the century. Yet, despite these frequent shifts in political direction, the changes introduced appeared to have been cumulative and

pragmatic in nature, with each successive adjustment building on the past, although sometimes withdrawing from one approach but adding to another. Gilg (2005: 159) suggested this 'adaptive realism' demonstrated planning was inextricably linked to the establishment and its enduring political and legal processes; which had continuously adapted in the light of changing events by a process of incrementalism, rather than revolution. Although other academics have not necessarily agreed with the 'communicative turn' proposed by Healey and others (Gilg, 2005: 172; Allmendinger, Tewdwr-Jones, 2002: 6), suggesting alternative approaches were also valid, there seemed to be a call at the end of the Twentieth Century, to ignore the dominance of any particular approach and "*explore more widely and deeply in theorizing the public production of space*" (Yiftachel, Huxley, 2000: 911; Allmendinger, Tewdwr-Jones, 2002: 20). For the UK, in 1997, this call for new approaches appeared to be a real possibility; there had been a change of government and, as will be discussed in the following, global forces, particularly the call for sustainable development as driven by the environmental movement, and events in mainland Europe promised to influence British planning.

Realising sustainability concerns

The concept of 'sustainability' and the need for 'sustainable development' have already emerged in this thesis as themes within planning. However, Cullingworth and Nadin (2006: 250) suggested that although there was wide political agreement upon the idea of sustainability, it has been badly misused and its definition was somewhat vague and uncertain. Partially this may have been because it was not entirely a new concept, but had always been present in planning regulation (Owens, 1994: 442; Cullingworth, Nadin, 2006: 249). Owens additionally identified both strong and weak interpretations of what may be meant by sustainability; the weak interpretation placed an emphasis on the environmental concerns and so allowed a wide usage of the term, whereas the stronger one recognised environmental capacities ultimately placed constraints upon economic development. Owens (1994: 440) referred to sustainability as "*a reconciliation of environment and economy*" whilst the 1999 UK Strategy for Sustainable Development (Cullingworth, Nadin, 2006: 257), suggested it had four aims; social progress, environmental protection, prudent use of natural resources and maintenance of high economic growth and employment. The more commonly used definition, however, was that cited in Chapter One; "*Development seeking to meet the need of the present generation without compromising the ability of future generations to meet their own needs*" (IAU, 2005). This was originally included in what became known as the Brundtland Report; a landmark assessment of environmental concerns which was requested in response to United Nations resolution 38/161 in 1983 (Brundtland, 1987: 11). The report's first aim was "*to propose long-term environmental strategies for achieving sustainable development by the year 2000 and beyond*". Following earlier UN conferences on the environment in 1972 and reports by Brandt, in 1980 and 1983, concerning economic limitations faced by world poverty, the Brundtland Report was written during a period that included the Bhopal and Chernobyl disasters (*ibid:* 21). It was a wide ranging report, touching

on global issues of poverty, security, the environment and economic growth. The next landmark event was the 1992 Earth Summit in Rio. It adopted Agenda 21, which was a declaration that proposed a comprehensive programme for sustainable development in the Twenty-first Century, but set no mandatory limits to reduce emissions of greenhouse gases (Cullingworth, Nadin, 2006: 255; UN, 2006). However, its commitment on global warming gave rise to the Kyoto Protocol of 1997, which did set limits. Although the participating countries have taken seven years to ratify it (Guardian, 2005), it is expected to have significant implications for planning; in terms of the transport and infrastructure development needed to support the UK's goal of cutting carbon emissions to 60% of current levels by 2050 (Guardian, 2007a).

It would seem World politicians have increasingly acknowledged sustainability to be an important issue, as growing concern for global warming has mobilised opinion. International commitments to the Kyoto agreement and other sustainability goals clearly represent a high level political resolve to achieve ideological objectives, which will need equally strong and effective state mechanisms, one of which is planning, to enact change at the local level. As the state's ability to deliver on promises will be tested at a local level, and not at the aggregate level, it may be concluded the issue of sustainable development promises to underline the critical importance of effective strategic-local processes.

European dimensions

In a European context, concern for the environment and achieving a balance with economic growth, prompted the European Union (EU) to develop mechanisms for achieving its commitments. The main mechanism for change came in the form of the European Spatial Development Perspective (ESDP), which was announced in May 1999 (Hall, 2002: 187). The ESDP arose from earlier initiatives by the German and then French, Danish and Dutch governments to provide systematic planning on a European scale (Cullingworth, Nadin, 2006: 88). As a non-statutory document, its main purposes was to raise awareness of spatial development trends, provide a common reference outline for planning decisions, promote integration of policy across different sectors of activity and provide a framework for sustainable economic development. Described as a strategic plan for the whole community (Allmendinger, Thomas, 1998: 252), its key objectives were to provide a more balanced system of towns and cities, parity of access to infrastructure and the prudent management of heritage (Hoggart, 2005: 10; Cullingworth, Nadin, 2006: 89).

A key factor for national and local governments, has been the relationship of the ESDP to the distribution of structural funds by the EU (Hall, 2002: 186), given the EU's tactic to pursue its policies through the allocation of funding. There have been a number of EU Community funding initiatives which attempted to address specific spatial issues. Of these INTERREG for transnational planning, and URBAN for urban regeneration, have been of particular significance to planning (Cullingworth, Nadin, 2006: 85). They have encouraged local authorities to work with partners in other countries and supported programmes that were consistent with the ESDP (*Ibid:* 93, 94). Underlying the ESDP, and the funding initiatives,

were the EU emphasis on a 'Europe of the Regions' and the principle of 'subsidiarity'. These have been promoted by the European Commission as a means of directly working with local and regional governments (Haughton, Counsell, 2004: 5). Subsidiarity has particular significance to any centralising tendencies by national governments, since it suggests disagreements at a local level ought to be elevated to a higher level only where there was a clear basis for doing so (Cullingworth, Nadin, 2006: 9). Others felt that despite the intentions of the ESDP, such high level attempts might be "*little more than a cosmetic covering*" over growing disparities in Europe (Albrechts *et al*, 2003: 115) and Kunzman (2001: 163) observed that, at least in Germany, the ESDP had produced little effect at a state level. Even so, though funding and the principle of subsidiarity it may be concluded that the ESDP has been a key consideration, which has required increased attention by the British government when reflecting upon planning reform (Haughton, Counsell, 2004: 36) and influenced the wider planning debate within the UK, as the following will now explore.

Collaborative, strategic (spatial) planning

As was mentioned in Chapter One, at the formative stage of the research alternative forms of planning were of interest to academics and were being presented as possible models for future reform. The earlier historical outline of planning touched upon calls for a more collaborative and integrated approach to planning within the UK, whilst at the same time others were pursuing the ideals of sustainability on the global front and the EU was seeking closer European integration via the ESDP. In particular, Healey's articulation of the principles of collaborative planning had generated considerable debate, which its supporters and detractors suggested had elevated it to a 'paradigm' that dominated planning theory (Yiftachel, Huxley, 2000: 909; Allmendinger, Tewdwr-Jones, 2002: 11; Gilg, 2005: 171). Then, following on from the development of the ESDP, and similarly reflecting consensus building principles, there emerged in mainland Europe another alternative planning approach, generally known as 'strategic (spatial)[1] planning', which will now be outlined (Albrechts *et al*, 2003: 115).

Strategic (spatial) planning followed naturally from the principles of the ESDP and was championed by Louis Albrechts, one of the academics consulted during the development of the ESDP. It was said to be an approach which was rooted in the private sector 'strategies and vision statement' management technique that had originating in the United States (Albrechts, 2001: 294; 2004: 744), then merged with ideas of collaborative and communicative planning (Healey, 2003: 120; Abram, Cowell, 2004: 210). However, like communicative planning, an exacting definition of strategic (spatial) planning was difficult to delineate (Allmendinger, Tewdwr-Jones, 2002: 7), as John Freidmann noted later (2004: 51) when he wrote he could not find any substantive books specifically written on the subject, so he turned to the works of Healey and Albrechts to better understand the concepts. Part of the problem appeared to lie in the inter-changeability of the words involved. Strategic planning, in the business management sense, had a specific meaning (Mintzberg, 1994: 23) but when used by planning theorists it represented a style of governance and a social process (Healey *et al*,

[1] *Strategic (spatial) planning – brackets as used by Louis Albrechts.*

1997: 5). Equally, spatial planning, a term said not to translate easily (Healey, 2004: 46), appeared to be both the European term for traditional land-use planning and a more profound, distinguishing expression meaning the antithesis of land-use planning (Haughton, Counsell, 2004: 6; Cullingworth, Nadin, 2006: 90). One reason for the confusion was said to be that strategic (spatial) planning had the capacity to diverge in different directions (Healey *et al*, 1997: 26), ranging from a purely technocratic process to a grass roots democratic one. Friedmann (2004: 52) concluded it was about long-range planning for territorial development, involving new institutions of governance and a comprehensive, integrated approach. Albrechts contributed to this understanding by adding that the future should be constructed from social values rather than "*arrived at as a result of existing trends*". Indeed he called for a 'desired', 'invented', and 'shared' future (Freidman, 2004: 63; Albrechts, 2004: 747), adding strategic (spatial) planning was "*not just a contingent response to wider forces but [...] an active force in enabling change*", thus echoing Healey's portrayal of collaborative planning, when she called for something broader than the practices of regulatory land-use planning, making an appeal for 'good' in the governance of place (Healey, 2003: 116). Friedmann noted it seemed to contain the cherished dream of planners – the 'Utopian' integration of everything, a form of comprehensive planning (Friedmann, 2004: 52).

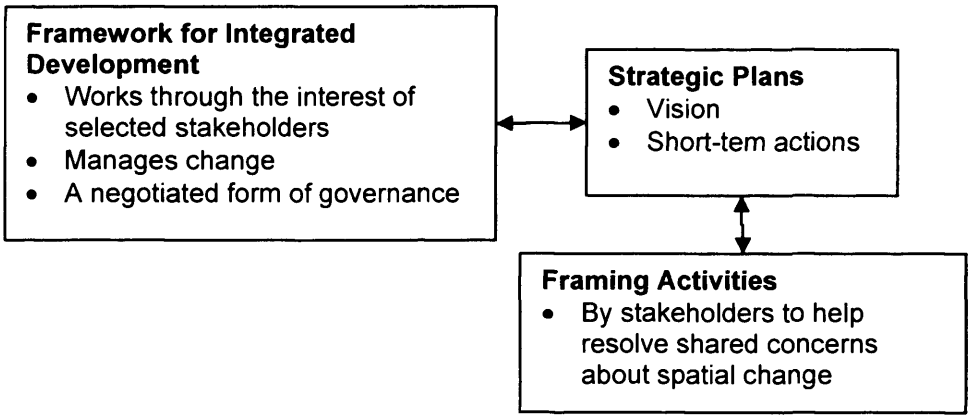


Figure (2.3): The building blocks of strategic (spatial) planning (Albrechts, 2004: 748)

Despite this interchange, a practical definition of strategic (spatial) planning remained elusive. Albrechts (2001: 308; 2004: 747) simply said there were "*no single universal definitions*" but it was useful to "*look for building blocks*", it was not a single concept, procedure or tool, and it needed "*tailoring to the situation at hand*" to achieve desirable outcomes. Figure (2.3) represents Albrechts's (*ibid*: 748) view of strategic (spatial) planning, showing the relationships between the framework for development, strategic plans and framing activities. It appears that a partnership then formed between Healey in the UK, Albrechts and Kunzman in mainland Europe (Albrechts *et al*, 2003: 113), but their 'Utopian' view, stemming from Healey's ideas on communicative or collaborative planning, was both welcomed in Britain, as a return to earlier aspirations, and criticised as too idealistic and impractical (Gilg, 2005: 172). As Allmendinger and Tewdwr-Jones (2002: 5) observed, communicative planning had, in its various guises, "*undergone a number of mutations*" since the early 1980's. Healey's alignment with mainland European thinking regarding strategic (spatial) planning was an

extension of this trend, but they recognised the contribution made to shaping academic debate. The debate about the future direction of communicative/collaborative planning theory was focussed at the time upon seeking "*a more dialectical engagement [...] and to further embed it as a democratic and progressive form of planning*" (*ibid:* 20). Referring to her analysis illustrated by Figure (2.2), Healey (1998: 11) suggested British planning needed to re-establish an emphasis on 'place-making', away from regulatory control, in terms of rights to use and develop land, to "*a way of thinking; policy discourses; frames of reference*". An observation reached by Gilg (2004: 173), but also supported by the above and reactions to the 2002 Green Paper and the new Act of 2004, previously described in Chapter One, was that the debate exposed the divisions between those who favoured tight regulation and those who wished to see a more vibrant and inclusive form of planning.

Observations on the past

This section has attempted to set the historical landscape for the rest of the thesis. Although it has been a wide ranging exploration, through British planning history, the rise of sustainable development, developments in Europe and calls for planning reform, the central focus has been how these events and strategic initiatives may have influenced strategic-local tensions. Several conclusions have been drawn, as summarised below:

- British planning has a long history of tensions and conflicts, which has been characterised by a process of evolution rather than revolution, adapting periodically to ever changing societal expectations, within the constraints of the British legal and political processes.
- The ability of national governments to deliver promises made at Kyoto, concerning sustainability, will depend upon how well their state processes, including land-use planning, implement strategic decisions at the local level; so highlighting the importance of strategic-local processes to the achievement of sustainable development.
- The ESDP, backed by EU funding and ideas of subsidiarity, appears to have been influential in a number of ways; requiring attention from the UK government and adding to the debate about planning reform.
- Recent British planning activity has been described as 'conflict management'. At the formative stage of the research new forms of planning were said to offer more vibrant, inclusive, integrated forms of planning. Subsequent chapters will return to these alternative forms to assess their ability to reduce strategic-local tensions.

A final observation may be drawn from this section and the above conclusions. The discourse would appear to possess two reoccurring themes; the enduring presence of conflict in the planning debate and the significance of the socio-political environment within which planning exists. Accordingly these themes will be carried forward. The following section will more closely examine the role of conflict within British planning, whilst the subsequent section will explore planning's socio-political environment.

2.4 The centrality of conflict?

As implied by the opening paragraph of the thesis and evident in the preceding section, the enduring presence of conflict in planning has been thoroughly documented by others. The significance of conflict has been consistently emphasised, with many asserting that to minimise it was a key aim of traditional land-use planning (Thornley, 1993: 26; Thomas, 1997: 8, Healey, 1998: 7; Beierle, Konisky, 2000: 587; Booth, 2003: 193; Watson, 2003: 395; Gilg, 2005: 55; Cullingworth, Nadin, 2006: 1). The purpose of this section is to explore why the planning debate often focuses on issues of conflict and disputes, to the extent that they, along with politics, have been said by Cullingworth and Nadin (2006: 2) to be at the centre of planning. Cullingworth and Nadin also went as far as to suggest that resolving conflict was the main task of planning, asserting "*if there were no conflicts, there would be no need for planning*" and that planning might be defined as "*the process by which government resolves disputes about land uses*". This view clearly makes the point that conflict has been an enduring characteristic, but should it be considered planning's main *raison d'être*? Does it fully describe why we need planning or does it merely highlight the effects rather than the purpose of planning? The following will explore this question; initially by examining the sources of tension that create conflict and then why public interest arguments have become a key feature of planning.

Sources of tension

To better understand conflict, it seemed rational to look first at the causes of tension which generate it. Thomas (1997: 10) has suggested, based on work by Professor Vidor of Budapest Technical University (no other reference given by Thomas), that tensions and unresolved conflicts may occur across a wide range of "*opposing concepts and ideas that underlie day-to-day practice*". He listed eleven sources of tension, as shown by Figure (2.4), which gave the impression that conflict was not so much central to planning, but all-encompassing and endemic within planning practice.

Sources of tension	
Holistic vs. partial	Legislation vs. anarchy
Synthetic vs. special interest	Cooperation vs. competition
Democratic vs. autocratic	Ecology vs. economy
Public vs. private	Regional vs. local
Lay vs. professional	Long term vs. short term
Intellect vs. values	

Figure (2.4): Identified tensions that lead to conflicts (Thomas, 1997)

The first conclusion drawn from the list was that it reflected the earlier findings in the chapter, that planning involved objectives, decision-making, methods and was set in a socio-political environment. For example: tensions arising from 'short vs. long term' or 'ecology vs. economy' might be associated with opposing objectives; other tensions from 'lay vs. professional' or 'intellect vs. values' may concern issues of decision making; 'holistic vs.

partial' or 'synthetic vs. special interests' tensions may relate to the planning methods used; and the socio-political environment could involve tensions from 'democratic vs. autocratic' or 'legislation vs. anarchy' issues. Interestingly strategic-local tensions were not directly included in Thomas's list. It was thought at first, they might be a combination of 'long term vs. short term' and 'regional vs. local' issues, where it was assumed 'long term' approximated to 'strategic' such that 'regional' was associated with 'long term or strategic' thinking and 'local' with a 'short term or tactical' approach. Thomas appeared to confirm this assumption by commenting against 'regional vs. local' issues that "*regional and national vision may be compromised by local expediency*". However, this would deny local authorities thought strategically or regional authorities tactically. Other possible cross pairings were also identified, such as 'public interest vs. special interests' and 'democratic processes vs. intellectual judgements', leading to the view that the list was illustrative of possible tensions, but not exhaustive and that arguably, strategic-local tensions were one cross pairing in their own right and not a combination of two other tensions. As with Thomas's list of planning objectives outlined earlier, closer inspection of the list of tensions revealed other possible overlaps between items and terms. For example, he commented planning "*practice is democratic*", yet since lay people were involved, "*professional advice may be rejected*". Equally oddly, it was said anarchy existed because "*much (trivial) development is uncontrolled*".

Despite these inconsistencies, it was felt the list provided a useful insight into the possible sources of tension and conflict within planning, particularly with respect to strategic-local tensions. As suggested in Chapter One, strategic-local tensions were thought to arise if strategic decisions were not aligned with local needs. It seemed reasonable to assume that strategic decisions would be based on some wider public interest argument, for example, additional housing, infrastructure improvements or the achievement of broad sustainability goals, as expressed by wind farms or high speed rail lines. Tensions could arise because locally other priorities existed, the wider needs did not have a strong local relevance or they were poorly thought through. For example, a proposal to expand an airport might be based on wider strategic needs but without considering alternative transport modes or the impact on local communities. It was also felt reasonable to assume such conflicts might arise from several sources of tension identified in Thomas's list. For instance, there may be concerns over the ecology, a bias towards private interests, a perceived lack of democratic process or differing interpretations of the public interest.

It was therefore concluded, the foregoing examination of possible conflict sources did indeed echo earlier findings; tensions could occur due to a wide range of differences between actors, including opposing objectives, the decision making and general methods used and the socio-political environment. In this eclectic mix of tensions, strategic-local conflicts, where strategic decisions based on wider public interest needs conflicted with local needs, at first appeared to be just a subset of 'public vs. private' tensions. However, Thomas appeared to imply that public interest arguments underwrote a greater range of tensions, when later in the same chapter, he concluded (*ibid*: 19) that the public interest was "*a cornerstone of*

the day-to-day decision making" within planning. Through this assertion, which brought to mind Cullingworth's and Nadin's comment about the centrality of conflict, Thomas served to emphasis that public interest considerations might play a more contemporary and significant role in planning, and therefore resolving conflicts, than his eleven point list initially implied; a point which the following will explore.

Serving the public interest

Thomas considered a key role of planning was that it "*seeks to safeguard the public interest*" (*ibid*: 10) yet he also appeared to concede to the view held by others, quoting the work of Schubert, Sorauf and Ross, that ideas about public interest were muddled and almost irrelevant (*ibid*: 17). Gilg (2005: 54) agreed the concept of public interest has become elusive to define and yet it was also politically popular, since it frustrated wealthy private interests (*ibid*: 182). Such comments suggested that although 'the public interest' was a discredited concept, it was still used, and therefore deserved to be further examined.

Booth (2003) has provided a detailed account of the historical concern to satisfy the public interest, or the public good. It was said to date back several hundred years to the basic concerns over fire, health and highways, but did not develop into areas of aesthetics until the seventeenth century. The principle that more than one person had an 'interest' in a piece of land, has been traced back to the feudal system of tenants, where rights were successively granted on others, subdividing land which was ultimately owned by the Crown (*ibid*: 28). Then seven hundred years ago, this widened to include the interests of neighbours, with a focus on 'nuisance'; for example, derelict buildings and blocked rights of way. Any disagreements were adjudicated by the local mayor and alderman. Although the feudal system gave way to leasehold and trust arrangements, in the centuries that followed the principle continued and evolved into a concept of common or 'public' interest, which became legally as valid as private property interests. Yet as already suggested, today there are strongly held views about public interest arguments. Booth (*ibid*: 11) found the boundary between public and private interests difficult to define and that "*What starts as the will to promote good living conditions that create opportunity for everyone can lapse too easily into a desire to protect an ideal environment for a chosen few*". Gilg (2005: 182) also felt public interest has become elusive to define. Furthermore, he described it as "*a smokescreen which planners often conveniently use to mask the real reasons behind a decision.[...] a useful concept because it is indefinable and flexible*". Thomas (1997: 17) had earlier said that "*Maybe it is just rhetoric behind which we hide*". All three comments suggested public interest arguments were sometimes unfairly used and unreasonably applied. Interestingly, Garside (2000: 145) warned against promoting an idea as in the public interest, which was not actually supported by the public, as this would be anti-democratic - even if the public might eventually realise it was in their best interest.

The link between public interest objectives and planning conflicts, relative to strategic-local tensions, may be seen within a discourse by Vigar *et al* (2000: 8) when they classified conflicts into two levels. First level conflicts were identified as those due to tensions between neighbours, for example residents and developers, echoing the historical origins of

public interest in medieval disputes, which these days required the application of detailed control regulation. The second level conflicts were said to arise from broader, strategic 'public interest' needs, such as the extension of an airport raised earlier. Vigar *et al* contended these two levels were related, since the public interest arguments used to set strategy also "*act as criteria for detailed regulation*", and so affected conflicts at the local level. They also noted that "*Every piece of land is unique in location and attributes. Every development on it has multiple impacts on other people nearby and in other places*"; thus emphasising that whilst strategy was an abstract concept, development brought local realities. As Booth (2003: 193) had observed "*the trouble has been that the acceptability of strategy is only really tested in its application in detail*"; by which he meant, at the local level.

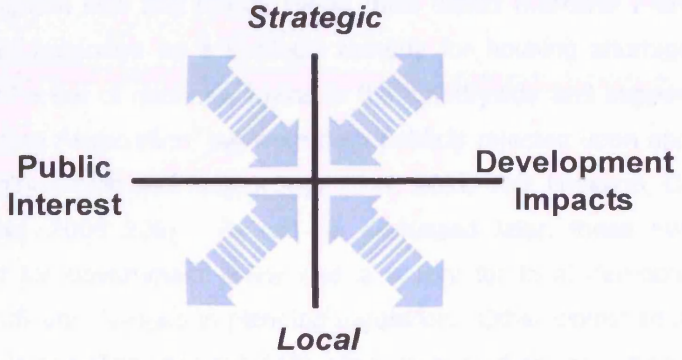


Figure (2.5): The tensions between public interest and development impacts.

The Vigar *et al* identification of two divisions of conflict neatly resonated with an earlier description of strategic-local tensions, which suggested wider strategic needs may conflict with local interests, and with Hall's (2002: 4) observation that planning controversies generally involved "*a conflict of right against right*". Figure (2.5), shows these tensions between strategic and local needs relative to tensions between development impacts and the public interest. It is intended to illustrate there may be differences in opinion locally, about what was in the public interest and how the development would effect the local community, just as centrally there may be strategic differences, about how the wider public viewed the proposal and what the development would bring to the region or nation. Each quadrant represents a potential source of conflict if not balanced with an appropriate quadrant, for example, local public interest needed to be balanced with local development impacts, and strategic public interest ought to be balanced with strategic development impacts.

However, conceivably the quadrants might not always be in harmony. For instance, if the strategic public interest requires a significant local development impact, this may not serve the local public interest and cause conflict. A renown example, was the long running inquiry concerning the proposed fifth terminal at Heathrow, taking 525 days to reach a conclusion and costing £70 million (Hall, 2002: 225; Gilg, 2005: 56; Cullingworth, Nadin, 2006: 466). It affected developers, local residents and the wider population: developers were affected by delays and additional costs; local residents by an instability of house prices and either a postponement in increased employment prospects or by prolonged noise/pollution

concerns; and the wider population, depending upon their point of view, by concerns for global environmental impacts or delays in obtaining improved transport services. At each level, tensions arose due to different perspectives on the proposal, differences as to whether the proposal would be a net benefit or not, and about the effects it would have on individuals, communities, businesses and non-commercial organisations. Whilst the Terminal Five inquiry allowed people to have their say and challenge the wisdom of experts, some might argue it ultimately supported the developers and represented a victory for government policy and a defeat of local democracy.

There have been other high profile examples of these tensions between strategic needs and local impacts, quite apart from issues concerning aviation. Booth (2003: 151) cites the cases of Tillingham Hall and Foxley Wood (also called Bramshill Plantation) in the late 1980s, which were proposed as a strategic remedy for housing shortages, based on the private financing of a set of mini-new towns in the countryside and supported by The Town and Country Planning Association, but were then publicly rejected upon appeal in the face of fierce local opposition which was 'anti-growth' (Hall, 2002: 133; Haugton, Counsell, 2004: 18; Cullingworth, Nadin, 2006: 225). As will be discussed later, these events, which were regarded a defeat for government policy and a victory for local democracy, subsequently brought about significant changes in planning regulation. Other similar situations occurred at Stansted, Windscale and Sizewell (*ibid*: 443). More recently there have been comparable high profile controversies including those involving wind farms, immigrant reception centres and waste incinerators (Boddy, 2005; Politics UK, 2005).

Whilst it is difficult to say whether developers have been more successful than local opposition groups in these cases, Evans (1991: 866) argued the tendency, at least in respect to housing development during the 1980s, was for the planning process to favour existing residents. This was certainly the case at Foxley Wood. He suggested planning invariably resulted in the maintenance of the *status quo*, because those in opposition to a development could not only exercise their voting rights, but also apply pressure to councillors and MPs, then present themselves at inquiries. Whereas those that might benefit from a development, for example, those without homes or jobs, were not directly involved and could not exercise their rights to the same degree. Such people were also part of 'the public', and yet their interest was not necessarily represented by the system. As Cullingworth and Nadin (2006: 2) pointed out, "*intervention through land use planning serves to maintain the dominance of particular interests*"; meaning affected residents were unlikely to accept the need for unsettling development, even when it would serve the wider public interest. The main issue with a tendency towards *status quo* decisions, as shown by Evans with respect to housing, was that they not only frustrated local situations, but in strategic terms they either moved the problem elsewhere or resulted in a general stand-off. Evans (1991: 854) argued the effect on housing of not supplying sufficient land, so protecting the interests of local residents and land owners, has contributed to the high cost of housing.

Several conclusions may be drawn from the foregoing discussion concerning 'the public interest'. It has been shown that the concept grew from modest beginnings to be an integral part of planning, but that although it has been much criticised, in terms of strategic-local tensions, the role of public interest arguments appeared to be significant and still common currency. Figure (2.5) was presented as a means of visualising the relationship between strategic-local tensions, public interests and local development. The point was made that all development happened locally, whilst strategic impacts were often more spatially dispersed, and it was also said that the use of public interest arguments did not always favour strategic developments. This was because local representation did not necessarily include those that might benefit from a development, and local residents were unlikely to accept the need for intrusive development based on the needs of others. It was concluded that since strategic-local tensions inevitably involved public interest arguments, any difficulties associated with defining those interests would only heighten tensions between the local and strategic levels.

Of planning's raison d'être

This section, the centrality of conflict, began by questioning whether conflict should be held as planning's *raison d'être*, as suggested by Cullingworth's and Nadin's (2006: 2) comments that resolving conflict was the main task of planning, and that "*if there were no conflicts, there would be no need for planning*". The following will now return to this point - having explored a range of possible sources of conflict, discussed the 'cornerstone' role that public interest arguments appeared to play in strategic-local tensions and before summarising the points raised in the foregoing.

The question posed earlier was does linking planning directly with conflict fully describe why we need planning, or does it merely highlight the effects rather than the purpose of planning? The response appeared to raise issues of emphasis and direction, since having considered the wide range of possible sources of tension, and the way public interest arguments are used to counter private interests, the root cause of conflict would appear to be our need to develop the land within our societal values and constraints. For, to extend Cullingworth's and Nadin's thinking; if there were no development, there would be no conflict and no need for planning. Whilst logically, humanity, through society and civilisation, is ultimately the source of conflict, for a planning thesis, it was felt a more useful conclusion might be that development was the tangible source of conflict and tensions, and consequently that conflicts of interest and tensions between people were inherent by-products of development. It is suggested that rather than highlight the inevitable existence of conflict, it might be more productive to emphasise planning's role in defining and defending the public interest. In other words it was felt, the *raison d'être* for planning ought not to be considered simply the state's management of conflict, but the management of development in the interest of those the state is supposed to represent; meaning the general public. This conclusion would appear to be supported by Vigar *et al* (2000: 8) who noted British planning had evolved

by emphasising both the regulation of development impacts and the achievement of public interest objectives.

In summary three main conclusions have been drawn from the literature cited in this section;

- Conflict appeared to be an inherent part of the planning process. It created tensions at various levels within the process and for different reasons, many of which involved matters of public interest. In particular, strategic-local tensions, the focus of this thesis, were found to involve public interest arguments.
- However, the public interest was said to be an elusive concept, open to misuse and abuse, where political processes tended to favour the *status quo* and sections of the general public were excluded from adequate representation.
- Rather than emphasis planning's role in resolving conflict, it was suggested that planning's *raison d'être* might be better directed towards becoming a state activity designed to manage development in the public interest.

2.5 Planning's environment

The preceding section has highlighted the difficulties experienced by planners when making decisions relative to public interest arguments. Equally, it was apparent from Section 2.3, which outlined the development of planning over the past century of planning, history would suggest the socio-political environment in which planners have operated, has significantly shaped that development. These two observations taken together were felt to point towards the importance of a general operating environment that might influence planning's ultimate decision making performance. Consequently, the following is aimed at exploring them further, beginning by considering behavioural aspects of rational decision making and then switching attention to a more general backcloth - the sociological fusion of society, power, politics and democracy.

Rational decision making

As mentioned earlier, Faludi viewed planning as rational decision making. Equally others have regarded decision making as the first face of power, which lies at the heart of society and the democratic model (Haralombos, Holborn, 2004: 547). The previous section described the importance of public interest arguments in planning decisions, where planners and elected representatives were expected to understand and defend the rights and interests of 'the public'. It may be assumed that reaching a decision about those interests would precede decisions about the form and suitability of an application or plan. In either case, how decisions were reached is clearly a vital aspect of the planning process. Cullingworth and Nadin (2006: 4) have also stressed the concept of rational decision making was fundamentally important to planning. Drawing heavily upon Sir Karl Popper's philosophical work, Faludi (1986: 20) supported the significance of rational decision making to planning, saying "*planning is simply the attempt to do [...] thinking systematically*" and adding the central focus "*is the*

quest for rationality, that is for comprehensively evaluating possible actions in the light of their consequences" (*ibid:*115). The 'rationality' referred to by these writers was based on the logic of the scientific method of inquiry; which required objectives to be determined, problems to be analysed and possible solutions evaluated, that would allow a reasoned choice of the most suitable option. However, as mentioned in the historical introduction, rationality has been challenged in relationship to planning. Previously, it had been noted that during the 1960s and 1970s, some had felt an over reliance on planning's ability to solve complex issues had resulted in it becoming increasingly removed from reality. The strict adherence to the scientific method was said to have ignored broader social values and favoured the *status quo* and business interests (Yiftachel, Huxley, 2000: 908; Van Driesche, Lane, 2002: 137; Healey, 2003: 105). The objectivity of rationality has also been criticised by those who would rather see a process for a 'fairer' distribution of resources. Yet despite the criticisms expressed, it still remained embedded in the planning process (Cullingworth, Nadin, 2006: 5). Writing during the period rational planning was under most criticism, Chadwick (1978: 117) offered some insights into the difficulties facing the application of traditional scientific methods to planning issues. Firstly, he argued there were problems of comparison; planning dealt with future states which cannot be directly compared with the present state, and equally the unplanned cannot be compared to the planned. Secondly, he recognised planning was partial, in that it was subject to external "*inputs or dislocations*" and that the quality of planning was dependent upon good forecasting and well chosen objectives. Banfield (1973: 148), also writing in the 1970s, made a practical observation, saying rationality was "*less likely to be found in public than in private organisations. One reason for this is the public agency's ends often reflect compromise among essentially incompatible ends*". He added, it was almost inevitable that since decisions could not always be made on a rational basis, other uncontrolled processes would operate. More recently this view has been supported by Gregory *et al* (2001: 418) who argued, based on a substantive range of research into decision making, that individuals found it extremely difficult to clarify objectives and assimilate probabilistic information. The result was that they often disobeyed the laws of rational thinking to find "*an easy or adequate way through the problem*", and that in groups, individuals were likely to be influenced by others and support otherwise poor decisions.

Cullingworth and Nadin (2006: 4) accepted irrationalities existed but made the interesting point that variability and unpredictability in decision making may be due to actors "*rationally seeking different objectives*". It would seem that the quest for complete rationality, knowing and evaluating all possible actions, may have been an unrealistic aim if only because decision making was limited by the information available to decision makers. Anderson and Kyprianou (1994: 189), as organisational behaviourists, referred to this situation when describing three types of decision models used at an individual level; 'Rational', 'Bounded Rationality' and 'Political Rationality'. Their definition of a rational decision was that understood by Faludi, but by 'bounded rationality' they suggested a decision making process in which individuals continued searching options until one presented itself that was "*good enough*" to be "*acceptable*"; meaning the decision makers, knowing the limits of their

investigations would seek pragmatic if not ideal solutions. Typically this process was said to result in a 'no decision' or the maintenance of a *status quo* condition. This form of decision making had resonance with the findings of Evans (1991) discussed earlier, concerning the tendency for planning to protect the interests of those represented, and not necessarily those who might otherwise benefit from a development. The third decision model, 'political decision making', was seen as similarly rational, but based on satisfying the decision maker's own personal interests, which may or may not relate to the wider interests of others. Again local lobbying by special interest groups and important local residents could be assumed to influence the judgement of politicians, to produce such 'political' decisions; which were not necessarily in the best interest of all those affected.

A conclusion drawn from this brief examination of rational decision making was that whilst the quest for comprehensive rationality may have been the ultimate goal, in reality a number of factors 'dislocate' the process. In short, not all information may be available within cost and resource constraints, there may be a tendency to accept the *status quo*, attempts to foresee the future were inherently uncertain and so unpredictable, objectives may be incompatible and individuals may have their own personal objectives. The imperfect nature of decision making so described challenged the idea of rationality sought by Faludi but provided some explanation as to why tensions occurred between actors. Since all individuals operated within society and were formed and constrained by its institutions, the question of decision making, whether by individuals or collectively through committees and/or approval structures, also needed to be considered within the wider context of society. This point will be explored in the following.

Society, power, politics and democracy

The historical review of British planning showed planning processes have evolved in response to a changing socio-political environment. Chapter Three will outline these planning processes in greater detail, but it is clear from the discussion so far that planning has to handle numerous sources of tension and conflict which arise from man's development of land. The following will explore how society has influenced these tensions and conflicts thorough its democratic structures and implicit power relationships, in an attempt to place earlier commentary in perspective and to enrich the understanding of strategic-local tensions.

Whilst Talcott Parsons proposed in 1937 a democratic consensus view of society, where society was centred upon agreement and dominated by cooperation, earlier social theorists notably Karl Marx, Emile Durkheim and Max Weber favoured a concept of society as one in which groups competed for domination through economic, cultural and political means involving the state and power (Cuff *et al*, 2000: 109; Dearlove, Saunders, 2000: 608). The exercise of power was thought to be closely related to concepts of state and democracy as described by a range of different sociological theories, including Pluralism, Elite, Marxist, Neo-Marxist and various state centred theories (Ball, Peters, 2000: 39-44; Haralombos, Holborn, 2004: 538-617). But there would seem to be both considerable agreement and disagreement about the relationships involved, depending upon the ideological perspective of

the writer. Consequently, the idea of a dominant theory has been doubted and rejected by other writers, notably Nicholas Abercombie (Dearlove, Saunders, 2000: 610). Marxism has been dismissed by Elitists as wishful thinking, claiming the egalitarian society was an illusion, whilst Pluralism and Elite theories were seen as expressions of conservative ideology that represented the interests of the privileged (Haralombos, Holborn, 2004: 615, 616). Pluralism however was also seen to support liberalism, which accepted the basic structure of Western democracies but argued for individual liberty and progressive reforms. Elitist theories proposed power was exercised by a minority of privileged individuals, but whilst empirical evidence supported those in power have privileged backgrounds, the causal effect was disputed. Marxists suggested power flowed from ownership rather than position (Cuff *et al*, 2000: 50, Haralombos, Holborn, 2004: 554).

Despite these opposing views, it was felt the views regarding sectional interest, or pressure groups (Ball, Peters, 2000: 125-143, Dearlove, Saunders, 2000: 206) were of relevance to this thesis. Pluralists believed Western society was increasingly fragmented by an expansion in the number of social groups and range of sectional interests, where each individual accumulated a sizeable set of interests; thus avoiding the domination of any one interest. As such the state acted to mediate between different groups, allowing each to influence decisions, but ensuring no one group dominated, and where winners and losers interchanged roles on different issues (Haralombos, Holborn, 2004: 544). Whilst the democratic process of electing political leaders and parties helped to shape the direction of government, pluralists believed occasional elections would not provide sufficient levels of participation, consequently special interest groups were needed to performed a vital, complementary role in moulding political opinion and programmes (Ball, Peters, 2000: 135-142). Interest groups have been classified as either 'protective', defending the interests of a particular group, or 'promotional' (Dearlove, Saunders, 2000: 207), supporting a specific cause. Empirical evidence was said to show protective interest groups were more effective than promotional groups (Haralombos, Holborn, 2004: 548), but either class could bring pressure upon political parties by providing funds and expertise or taking direct action (Gilg, 2005: 54, Haralombos, Holborn, 2004: 545). Although pluralists would argue all interests were represented in some form, this assumption was disputed by others. It was also said by John Urry (cited in Haralombos, Holborn, 2004: 547), those in power have used interest groups to give the illusion of participation yet allowed them to create a stalemate which protects the *status quo*. Equally, Marxists suggested those in power manipulated interest groups and individuals, through the media or the education system. Such criticisms have given rise to 'elite pluralist' theories (Dearlove, Saunders, 2000: 338; Kingdom, 2000: 530; Haralombos, Holborn, 2004: 549) , which accepted Western societies were essentially democratic, as their governments facilitated compromise, but although power was widely dispersed, it was unequal and so leaders mainly influenced decision making. This revised view was supported by evidence in Britain where it was said the trend had been an increase in special interest groups, but they were smaller and no longer concentrated on parliament, but surfaced in a variety of different arenas.

Sociologists like Jürgen Habermas and Anthony Giddens believed humans created society through their own actions. As mentioned previously, both were formative to the development of collaborative or communicative planning by Patsy Healey, and others including Forester, Innes, Hoch, Baum and Hillier (Allemendinger, Tewdwr-Jones, 2002: 5; Haughton, Counsell, 2004: 41). Healey (1998, 2003: 106) has said she particularly drew upon the work of the British sociologist Giddens, who in turn been influenced by Marx, cultural anthropology and phenomenology. Giddens provided Healey (2003: 106) with a "*way of situating the active work of participants in governance processes*". He was also accredited with the 'Theory of Structuration' (Cuff *et al*, 2000: 316, Haughton, Counsell, 2004: 969) in which humans were said to create structures which determined our behaviour via 'rules' and 'resources'. Resources may be 'allocative', for example raw materials and land, or 'authoritative'. Authoritative resources were non-material and existed to enable some humans to dominate others. Social systems, institutions, government and the state were seen in this way, where humans constantly intervened, using a mutually shared knowledge and relying upon a certain level of predictability in their interactions.

Habermas, like Giddens was known for constructing pan-sociological theory (Cuff *et al*, 2000: 327). Whilst Marx and his successors had identified two forms of human reason, the instrumental kind, associated with well-being and domination, and the emancipatory kind, associated with freedom and liberation, Habermas proposed a third kind, concerning communication. By a linguistic analysis of language and communication he developed his 'Theory of Communicative Action', which rejected the instrumental concept of domination and argued for a society where social relationships were based on mutual recognition (*ibid:* 330). His idea of a rational society was consequently one constructed of free communication, where ideas were judged on their merits and unaffected by the ideology of others; in effect communication that was not dominated but liberated (Ritzer, Goodman, 2004). He suggested our free, reasoned interactions and participation with each other would provide solutions which were acceptable to all. Other sociologists have also influenced planning academics. For example, Michel Foucault held particular views on the relationship between power and knowledge, suggesting power operated through an unstable network of social relationships, and could only be studied by its effects (Haralombos, Holborn, 2004: 583; Gilg, 2005: 51). His views contradicted the more traditional view of power, proposed by Weber, who believed there existed a fixed amount of power distributed over the population, and more recently Steven Lukes (Haralombos, Holborn, 2004: 540), who proposed power was exercised over those who were harmed by its use, even if they did not realise it.

The above discussion of sociological views suggested that, whilst pressure groups were central to pluralism and elite pluralism, elitists, Marxists and Neo-Marxists focused on the use of power by other groups, for example, capitalists, media interests, multi-nationals and the ruling class. In the context of planning and the interaction between stakeholders, the role of pressure groups expressed by pluralism and the use of power by developers and government alike as articulated by Marxist theory, appeared to have most relevance, but equally all the views held may have some significance and application; if only to highlight that relationships

between actors could not be assumed straightforward, but complex and multifaceted. The range of theories discussed also gave perspective to the historical development of planning, reflecting elements of each contemporary theory as they gained influence, from the Marxist basis of land nationalisation in 1947, to the Neo-conservative approaches at the end of the last century. Each appeared to have left its mark in the current process, producing the periodic swings in planning policy noted in the earlier historical perspective. More recently, Giddens' 'Structuration' and Habermas's 'Communicative Action' theories, which shaped modern sociological thinking, have been instrumental in developing planning discourses, facilitating greater participation in planning processes. Accordingly Cullingworth and Nadin (2006: 436) gave credit to the work of Healey and others in encouraging community level democratic renewal, which caused a greater emphasis on community involvement in the 2004 Act, as will be outlined later in the Chapter Three.

It could be drawn from the foregoing was that the planning process in Britain reflected a pluralist, consensual model; where individuals, pressure groups, developers, politicians and civil servants attempted to negotiate change though power relationships, which were not always equal, to achieve pragmatic compromises that inherently involved winners and losers and sometimes resulted in supporting the *status quo*. Such a view could be contested, but it serves here to highlight the role of power and negotiation in the planning process. Since negotiation both required a willingness to compromise and the ability to compromise, it suggested civil servants and politicians knew the limits of their power and authority. In British planning the limits of such authority were ultimately conferred by Parliament and upheld by the courts, through the use of 'discretion powers' (Cullingworth, Nadin, 2006: 9). The extent that central government allowed local authorities to exercise flexibility in negotiations would therefore seem to be a crucial aspect of strategic-local tensions, and a point that will now be explored in greater detail.

Flexibility through local discretion

The events at Tillingham Hall and Foxley Wood in the late 1980s were outlined previously, when considering the relationship between public interest and strategic-local tensions. Booth (2003: 155) observed these events did "*little more than point to the fact that there is always a possibility of tension between strategic policy and local implementation whenever a development decision has a more then immediate impact [...] This tension is inherent in British development control because of its discretionary nature*". However Booth did not suggest that the use of discretion caused tension, rather the reverse; arguing the use of discretionary practices had evolved to ease tensions. His argument illustrated the bipolarity of discretion; which largely depends upon which side of the decision it is viewed. Several aspects of the term 'discretion' have been captured by Phillip Allmendinger and Huw Thomas (1998: 13-14) in relationship to bureaucrats. They felt discretion was inevitable in all organisations, that it was reflected in the bureaucrats' ability to "*make choices to enforce some rules, particularly those that protect them, whilst disregarding others*", that bureaucrats valued their discretionary powers and (as suggested by Ham and Hill in 1993) would seek to

maximised them. Keith Thomas (1997: 9) referred to discretion in more normative terms, as being used "*to cope with the uniqueness in coming to a decision [...] in the factors taken into account in decision making [...] in framing the terms of the decision*" and significantly for this discussion of strategic-local tensions, he saw discretion "*constrained by guidance issued at a national level and the development plan policy usually decided locally*". What then were the roots of today's discretionary powers?

By providing a detailed account of the development of planning control processes, Booth (*ibid:* 26-52) traced the early need for 'flexibility', from originally resolving conflicts between neighbours, to the modern use of discretionary powers. As described previously, the principle of 'common' interests was established during medieval times and continued, even though feudal tenancy was replaced by leasehold and trust arrangements. Initially disputes between neighbours were resolved by the local mayor, using his judgement and discretion, but then with the advent of trusts, disagreements were increasingly elevated to courts of common law. However, as common law was relatively prescribed and favoured trustees, there was also a tendency to use the law of equity, as it was more discretionary in nature and arrived at more equitable solutions. Ultimately a substantive case law history made it possible to anticipate court judgements, allowing decision making to be absorbed into an administrative process; into what became the planning process (*ibid:* 32, 54). As the population expanded, the Monarchy, then Parliament, attempted to regulate the expansion of cities, so beginning a strategic involvement by government in the wider issues of land use. Parliamentary Acts addressed the power of landowners in the face of poor housing and mounting disease, with the 1858 Local Government Act providing the first national development control standards. The 1875 Public Health Act reformed local government and introduced a central government office for town development, which issued model development bylaws for adoption by local governments (Hall, 2002: 17). Then as municipal authorities turned to the central government office for technical advice they institutionalised the modern central-local relationship. Although the bylaws were thorough in many respects, as models they intrinsically included discretionary elements, because centrally not all local circumstances could be anticipated. This made them attractive to the municipalities, who readily implemented them whilst allowing themselves considerable local decision making (Booth, 2003: 52).

In time, however, the building bylaws became very prescriptive, allowing little movement for local authority adjustment, and soon there was growing pressure to increase their powers. The 1909 Town Planning Act etc. consequently reintroduced a significant element of local discretion, although it was restricted to new development and excluded built up areas (*ibid:* 59; Cullingworth, Nadin, 2006: 16). Even so, local authorities were better able to control aesthetics and negotiate with developers, for example allowing narrow side roads in exchange for open spaces and wider main roads. Successive Acts in 1919, 1922 and 1932 further increased their local discretionary powers, through the use of 'interim control' procedures. Interim control had been introduced to allow developers to continue whilst plans were being approved, but in reality it enabled local governments to exercise even greater control (Booth, 2003: 81). The Barlow report in 1940, and the Uthwatt report in 1942,

ultimately resulted in the Act of 1947 which pioneered the modern universal system of planning control (Hall, 2002: 57; Booth, 2003: 89; Cullingworth, Nadin, 2006: 19). The 1947 Act introduced a system of indicative plans and nationalised development rights. Significantly, it introduced the concept of a 'material' change of use, but without clearly defining the term. This gave considerable discretion to the local authorities since they could decide if the development plan was a 'material' consideration or not. To some extent this increase in local authority control was offset by the introduction of General Development Orders (GDOs), which allowed some development to occur without local government involvement. By both strengthening and rationalising local discretionary powers, the 1947 Act enabled universal control, a keystone of nationalised development rights (Booth, 2003: 3). However, there arose a greater reliance upon the appeal system, as increased control generated more disagreements. Judges, in seeking to better define local discretionary powers, then turned to relevant government advice (*ibid*: 115), which was given in the form of 'circulars'. These publications were initially intended to elicit information, but ultimately became a means of explaining how the government thought the statutory powers should be used, and so led to the development of Planning Policy Guidance notes (PPGs) and more recently Planning Policy Statements (PPSs).

This brief historical outline of the way local discretionary powers had been progressively embodied into planning law, may be seen to reflect a British administrative tradition of avoiding over prescriptive regulations but allowing the courts to adjudicate on the basis of precedent (*ibid*: 4). At the same time it reflects a varying political relationship between central and local government. Central government had been able to achieve its objectives, for example control over the cities in the nineteenth century, or achieving a process of universal control in the twentieth century. Local authorities felt they had also achieved their objective of greater independence, such that some would regard them as "*the glories of democracy*" (Dearlove, Saunders, 2000: 303). The balance struck has shifted over the years, with model bylaws initially allowing discretion then becoming restrictive, followed by increased flexibility that was constrained by the introduction of PPGs, with each phase reminiscent of Healey's earlier pictorial portrayal of planning history, Figure (2.2).

A conclusion drawn from the foregoing, was that local discretion, which began as a flexible negotiating tool between individuals, had through the necessary involvement of legal frameworks in a developing society, matured into a political power, which has since been pragmatically dispensed and curtailed by those in high office to suit the political issues of the day. It would seem politicians, finding themselves constrained by the evolutionary nature of British legal processes, had opted to use discretionary powers as a negotiating tool, such that discretionary powers represent the flexibility or elastic in the relationship between local and central government; where central government set strategies for local government to implement. The following will consequently focus upon the way this relationship has changed in more recent times as a means of exploring the dynamics involved.

Central - local relationships

In the preceding review of discretionary powers it emerged discretion was inextricably linked with relationships between local and central government. Kingdom (2000: 599) described six different theoretical models to explain the central-local relationship; from 'Agency', where local government was an extension of central government, to the 'Marxist' view that they answered to greater forces of capitalism than central government. His 'Power-dependence' and 'Stewardship' theories recognised a discretionary, pluralistic bargaining process with the centre, except that the Stewardship theory argued "*any sense of independent power is illusory; ultimately the steward must defer, or face removal*"; meaning central government would ultimately win. Although believing a single theory was too simplistic, Kingdom recognised the steady erosion of local authority power had been a continuing post war characteristic and that the 1980's had been particularly "*characterized by antagonism and mistrust*" (*ibid*: 600). Developing this point, the following will focus upon the administration prior to the election of New Labour in 1997 and the period generally known as the 'Thatcher years'. This period was of interest, as a lens through which to examine the issues, because there had been a declared intention by the Thatcher and Major governments to deregulate planning in line with their market philosophy. It reflected a distrust of Labour councils, such that "*ways were to be found to loosen the perceived stranglehold of local authorities on the development of land necessary for economic recovery*" (Booth, 2003: 136), a clear reference to the discretionary power local authorities were felt to exercise in blocking development proposals. For although national government provided the regulatory framework, fiscal incentives, powers for compulsory purchase and policy guidance, as development occurs locally, the primary actor in the planning system was the local authority (Vigar *et al*, 2000: 12, 22). The following will describe how the Conservatives attempted to control the actions of local government, in which the principle means was the way discretionary powers were exercised, both locally and nationally (*ibid*: 25).

Booth (2003: 135) has portrayed three periods within the eighteen consecutive years of Conservative government; an early period providing the clear statement of policy direction to introduce market philosophy, a middle period of confusion and lastly the 1991 Act which reintroduced certainty and a new policy direction. During the early period the Conservatives initially attempted to use legislative devices to limit local authority controls, starting with Special Development Orders (SDOs), an existing instrument intended to short cut planning processes (Cullingworth, Nadin, 2006: 140). However, this approach met with fierce opposition and so other attempts to reduce local authority power were used, including a number of statutory changes, that aimed to provide alternative planning regimes (Thornley, 1993: 185). Enterprise Zones, Simplified Planning Zones and Urban Development Corporations were introduced, then the General Development Order was widened and the Uses Classes Order amended. Each was claimed to have diminished the powers of local government, but probably achieved less than was expected (Allmendinger, Thomas, 1998: 137-161; Booth, 2003: 139, Cullingworth, Nadin, 2006: 141). Given, as mentioned previously the courts had ruled government circulars were material considerations, the focus

shifted to constraining discretionary powers by expressing government requirements of the planning process. The circulars became different by their "*tone and their content*" (Booth, 2003: 144, 147). Then the Conservative policies were tested over the Tillingham Hall and Foxley Wood events, resulting in failure for the government; so marking the middle period of confusion. In part this was because the government was unable to reconcile its free market strategy towards development, with its traditional attitudes towards the protection of individual property interests. Faced with this failure they set about strengthening guidance instruments, by introducing PPGs and then RPGs, which were more prescriptive in nature than circulars and related to specific topics (Vigar *et al*, 2000: 17-19). Yet, if the Conservatives' intention was to clarify the discretionary, and essentially deregulated, nature of development control developed over the past century, it achieved a mixed response. Generally it was felt PPGs provided a more coherent approach (Booth, 2003: 156; Vigar *et al*, 2000: 17) but others argued their use perpetuated the uncertainty of a discretionary system, but did not address the causal issues facing planning; for as Cullingworth (1997: 950) noted: "[...] *in attempting to cover all circumstances and eventualities* [...] *they succeed in obscuring essential underlying issues, and make it arguable that almost any proposal harmonises with some official guidance*".

Attention then moved to the development plan process and proposals were put forward to replace Structure Plans with regional guidance from central government and county policy statements. In the event, to the surprise of its opponents, the government abandoned this approach, which had seemed consistent with its philosophy, and opted to incorporate an amendment into the 1991 Planning and Compensation Act, which marked the beginnings of the third phase of Conservative reform, or so called 'plan led' system (Bramley, Lambert, 2000: 97; Booth, 2003: 156; Cullingworth, Nadin, 2006: 113). It offered a much clearer system; development plans were made the primary consideration in development control under Section 54a, district wide local plans became mandatory and Structure Plans no longer needed ministerial approval, although ministers could 'call in' plans if necessary. It was argued by some that the insistence on plan preparation was a means of restricting local authority discretion. Others felt the framework of local planning was more logical and it gave the planning profession a renewed sense of purpose; such that "*The belief was that planning had weathered the storms of Thatcherism and planning was back in business*" (Thornley, 1993: 230). Opinions today are divided about the net effect of the Thatcher-Major period. Some believe the Conservative attempts to reform the process made little practical difference (Booth, 2003: 158; Cullingworth, Nadin, 2006: 113) whilst others feel the system underwent a significant transformation (Allmendinger, Thornley, 1993: 219; Booth, 2003: 134). However it can be seen that throughout the period government attempted to curtail local authority discretionary powers, as a means of implementing its market philosophy, which it felt would otherwise be frustrated by Labour controlled councils.

The attitude towards local Labour councils highlighted an inherent feature of discretionary powers; the level of trust involved. Ironically, after public mistrust became a feature of the Conservative period over allegations of 'sleaze'. In its fourth report, The

Committee on Standards in Public Life turned its attention to local government, and specifically the planning function, due to incidents of alleged impropriety by councils in North Cornwall and elsewhere. The report (Nolan, 1997: 71-75) recognised the passions generated by planning decisions, and then identified four possible sources of concern; the role of members in decision making process, the adherence to best practice, the negotiations involved in planning gain and extent that decisions were independent scrutinised. In each area, it may be held the manner in which local discretionary powers were exercised affected public perceptions of local authority propriety. Booth (2003: 159) had commented the question of how elected representatives conduct themselves was "*as old as local government*"; where corruption was not simply a question of bribes but might also involve advancing certain ideological ends. However, the Committee found nothing intrinsically wrong with politicians being involved in the process; saying planning was not an exact science, it involved administrative not legal decisions and politicians had a democratic role to represent their electorate. The report highlighted the public felt planning permissions were being "*brought and sold*" because the negotiation processes were not sufficiently transparent (*ibid:* 77-80). It diagnosed that discretionary powers were, either innocently or knowingly, open to abuse and recommended government guidance be tightened, public participation increased and other authority members involved. Continuing with the theme of trust, the report (*ibid:* 81-83) also found granting planning permission for council owned land, or land from which the local authority might benefit, raised 'conflict of interest' issues which the Secretary of State may occasionally need to settle by independent review. The 'Nolan Report', as it became known, essentially challenged the Conservatives' suspicions about the abuse of power at a local level, by supporting the role of locally elected representatives and advocating greater transparency in local decision making, yet at the same time it recommended a tightening of central control in terms of guidance and independent reviews.

The foregoing has described how the Conservatives found ways to pursue their market philosophy, providing some insight into the balance of central-local linkages within planning. It may be concluded the Nolan Report touched on the key issues concerning the central-local relationship, particularly those of trust between layers of government. In terms of public trust, the suggestion was that greater public participation and transparency might improve decisions made on a discretionary basis. As development occurred locally, successive governments appeared to have accepted some degree of local discretionary power must be delegated to local administrators, since all eventualities could not be foreseen from the centre. However, when this power was not exercised in line with the national government's agenda, they had reacted by tightening control and limiting local discretionary powers, through a variety of means. Local discretion may therefore be seen, not just as the elastic between local and central rule, but as a fundamental power relationship, in which national government generally had the ability to control; echoing Kingdom's 'Stewardship' theory.

Quintessentially British

Although academic writers have differed in their understanding about planning's objectives, sources of conflict, role of public interest arguments, decision making and socio-political theories, there would seem to be a consistent agreement that British planning was relatively unique and distinct from most other planning systems in the world (Thomas, 1997: 280; Booth, 2003: 2; Healey, 2003: 103, Cullingworth, Nadin, 2006: 10). Yet, whilst the foregoing exploration of how local discretion had evolved and been used within the British planning system, may demonstrate planning was inextricably wedded to the British political and legal system, but it does not necessarily explain why the UK system was said to be a prime example of the use of discretionary powers, with a well developed regulatory framework, yet a weak tradition of spatial planning (Albrechts, 2004: 744; Albrechts *et al*, 2003: 116). In the following the alleged uniqueness of British planning, relative to its use of local discretionary powers will be explored, in order to understand why it has achieved this reputation.

An obvious starting point was to consider the use of local discretion in other countries. Booth (2003: 3-8) compared British planning with other approaches and contrasted the flexibility sought by British planners with the certainty, clarity and precision favoured by the French. Like the British, the reason behind the French approach reflected their legal system. Based on principles of the Roman law, the French made no distinction between current rights of enjoyment and rights to future development. As a result, detailed land-use plans were not expressions of policy as in the UK, but were legally binding documents, with different zones precisely defined in terms of how owners may exercise their rights. Nothing was left to chance. However, Booth (*ibid:* 6) noted that the prescriptive French approach also created issues, due to a lack of flexibility, and as a consequence the actual practice of development control included a high degree of flexibility on the part of its local administrators. Other European countries, for example, Italy, the Netherlands, Spain and Finland, similarly have used zoning as the basis for planning (Cullingworth, Nadin, 2006: 9). The USA uses a zoning system, which like other countries also had origins in its own legal system. Whilst the American constitution protected an individual's right to own property, the law had determined the State may legitimately use zoning in the same way that it exercised police powers, as a means of protecting the rights of everyone (Booth, 2003: 7; Hall, 2002: 205). Disagreements concerning the boundaries of zones were resolved through the courts, but even so it had been necessary to build in flexibility into the zoning ordinances and allow some degree of negotiation. It would seem that only in Britain was flexibility closely enshrined in law through the concepts of discretionary powers and materiality, such that there was a partial divorce between policy and control (Booth 2003: 3). Booth (*ibid*: 8) however concluded that each approach inevitably required flexibility and that perhaps no one system was better than the other. Cullingworth and Nadin (2006: 9) on the other hand highlighted a crucial difference between the British approach and the zoning of other countries, commenting that only in the British system was local discretion enshrined in law and so ultimately controlled by central government. They suggested local governments in the States and other European countries would not tolerate the intrusion exercised by the British government in local affairs.

It would seem, like Britain, other countries need flexibility in their processes and that their approach to planning regulation also reflected their legal history. Generally they have resolved the issue of flexibility at a local level, either informally as in France or through adjustments to local zones as in the US, but a key point was that the local discretion involved was largely independent of central government control. It is therefore suggested the reason British planning was distinctive, was not solely because it embodied local discretionary powers, these were essential to negotiation and resolving conflict, but because those powers reflected national government control. A conclusion being that in Britain, planning would appear to be noticeably more politically controlled by central government, than it was in many other industrialised countries.

A political setting

This section, which set out to explore the environment which has shaped Britain's distinctive planning processes, has outlined and reviewed the rationality of decision making, the relationship between society, power, politics and democracy, how planning evolved local discretionary powers and how government has used those powers in a distinctive way compared to other countries.

An examination of rational decision making confirmed that whilst comprehensive rationality may be an ultimate goal, there were a number of factors that 'dislocated' the planning process and contributed to conflicts between actors. A review of sociological theories then brought a perspective to the historical development of planning, which helped explained the evolutionary, yet periodic development of planning noted earlier, and the pressures for a more consensual form of planning. The focus then moved to the search for flexibility in the planning process and the role of discretionary powers in planning, which was suggested existed as a fundamental power relationship between national and local governments; a point that was reinforced by Conservative actions during the Thatcher years.

Based on the review of literature relevant to this section, concerning planning's socio-political environment, several key conclusions have been drawn relative to strategic-local tensions.

- It was suggested that British planning had developed on a pluralist, consensual model; where individuals, pressure groups, developers, politicians and civil servants attempted to negotiate change, often through unequal power relationships, which although aimed to achieve pragmatic compromises, had a tendency to support those with vested interests and sometimes resulted in the maintenance of the *status quo.*
- It was held that discretion, which began as a flexible negotiating tool between individuals had matured into a political power; dispensed and sanctioned by those in higher office, given they were unable to remotely anticipate all eventualities.
- Other countries, like Britain, also needed flexibility to resolve local planning tensions, but they achieved this locally with little intervention from central government. In the UK, the legally enshrined use of discretionary powers bound British planning to a

unique power relationship between central and local government, had caused British planning to be noticeably more politicised than in many other industrialised countries.

2.6 The hypotheses emerge

In this final section of Chapter Two, the foregoing literature reviews, discussions and conclusions will be used to refine the basic research question and develop research hypotheses. In Chapter One, literature was used to illustrate the existence of strategic-local tensions in planning, both at the time the research was initiated and since. The research itself was based on a broadly defined aim "*To significantly increase the body of knowledge about GA in the UK; its current infrastructure, role within the economy and relationship with England's planning process*". Yet, the research question raised in Chapter One was generalised to a higher level than General Aviation. It asked, given past concerns, if current planning reforms would enable a reasonable alignment of local and strategic interests. This chapter has explored what factors might affect the alignment of local and strategic interests, since without understanding the relationship it would not be possible to assess the future role of reforms. It has involved reviewing British planning over the past century and discussions of the broad framework, issues of public interest, flexibility and discretionary powers, all set within a wider socio-political environment, in this and other countries. The purpose of this chapter was to reach to this point, where the connections between strategic and local interests were better understood and research hypotheses could be proposed and supported on the basis of literature. This section will bring together these wide ranging threads; first by briefly encapsulating the literature reviewed so far, then discussing the wider issues that will enable the main hypotheses to emerge.

Overview of the landscape

This chapter reviewed a range of different literature written by planning academics, behaviourists, sociologists and political scientists. It started with an examination of possible specific and generic objectives, where it was suggested that although planning had moved towards the concept of sustainability, its individual objectives, modes of decision making and methods were potential sources of tension and conflict which ought to be examined. An initial review of the past one hundred years, demonstrated a long history of such tensions and conflicts, which reflected an evolutionary, yet periodic, adaptive process strongly linked to the British legal and political climate. Sustainability, as a concept for potentially reconciling environmental concerns and economic growth, was found to be high on international agendas and a growing influence upon planning. Crucially, planning was said to be one of the state processes required to deliver such international commitments through strategic-local linkages. Developments in Europe were also felt to be significant to British planning, with the ESDP exerting pressures through EU funding towards greater regional planning and a unified approach to planning. Concurrently, academics had proposed British planning, which some had portrayed as 'conflict management', should adopt a more consensus based planning approach; variously described as 'Communicative, 'Collaborative' and 'Strategic (Spatial)' Planning. A few held managing conflicts to be the main task of planning, and indeed, it was

found tensions and conflicts were an inherent part of planning. Examples of strategic-local tensions, where strategic decisions based on wider public interest arguments conflicted with local needs to create intense local conflict, were discussed. These included Heathrow's Terminal Five, Tillingham Hall, Foxley Wood and others involving wind farms, immigrant detention centres and waste incinerators.

A review of sociological theories of society suggested that, even though generally human interaction was based on consensus and agreement, conflicts ultimately reflected humanity and society. If Pluralists were correct, planning might aim to mediate between different groups, ensuring no one group dominated and minimise disagreement, but it was an unrealistic objective to resolve all disputes to the satisfaction of all parties. Rather than a focus on conflict, it was felt planning should be seen as a state process which managed development, in the interests of the general public. Yet the public interest itself was found to be a problem concept. Its arguments were said to be elusive, sections of the public were not always represented and those directly affected by intrusive development were, in any case, unlikely to accept wider public interest arguments. As a result it was suggested planning decisions sometimes supported the *status quo*. Lord Nolan's (1997) suggestion for increased public participation, which also happened to be implicit in the 'collaborative planning' and 'strategic (spatial) planning' approaches, was thought to be one way forward to improve planning's expression of the public interest. However, an examination of rational decision making processes and the pluralist democratic model, confirmed a general tendency towards *status quo* judgements, borne of limited resources, vested interests and pragmatism. The main issue with *status quo* decisions was that they not only frustrated local development, but in strategic terms, they either moved the problem elsewhere, as pointed out by Evans regarding smaller, high density housing, or resulted in a general stand-off, as happened with the Conservatives' strategy to build new towns after Foxley Wood. This latter rejection of government policy, during the Thatcher years, appeared to result in a more outwardly rational, plan-led approach to planning, which was supported by improved national guidance. Whilst the Conservative government's relationship with local government, particularly labour controlled councils needed to be set within a broader context of the politics of the time, for the purposes of this thesis, it may be said that despite significant attempts to erode local power, their efforts were frequently frustrated. This illustrated the resilience of the established processes; which paradoxically caused the Conservatives to adopt a centralising approach, rather than the deregulatory stance inferred from their philosophy.

In a comparison with other possible planning systems it was found, in Britain and other countries, administrators needed at the local level to exercise some flexibility to adjust regulations to local circumstances and particularities. However, only in Britain was this need for flexibility closely enshrined in law, through concepts of discretionary powers and materiality, such that it also required a split between policy and control. This was said to reflect a British administrative tradition of avoiding over prescriptive regulations which allowed the courts to adjudicate on the basis of precedent. As a consequence, it was felt only British local discretion had been elevated to a political power that enabled national government the means

to directly influence local government's decisions. In this sense, British planning was felt to have been more politicised than in other countries, since it was subject to changes in national politics and not just local ones. It was felt local flexibility and discretion had become entwined with the British legal system, which bound British planning to a unique power relationship between central and local government.

Responding to a refined question

In summary, it has been described how strategic-local tensions were thought to be closely allied to the relationship between national and local governments and that tensions arose from the way concepts of wider public interest and local discretion were exercised. The following will explore how a better understanding of this relationship helped to refine the basic research question raised in Chapter One and then enabled research hypotheses to be developed. Figure (2.6) summaries the strategic-local relationships as discussed.

Strategic		Local
○ National elections ○ National legislation ○ Planning inspectorate	***Legitimisation***	○ Local elections ○ Local consultation
○ National government ○ National pressure groups ○ National developers	***Actors***	○ Local government ○ Local pressure groups ○ Local developers ○ Aggrieved individuals
○ Centralising ○ Autocratic ○ Guidance ○ Initiating ○ Reforming ○ Remote	***Power***	○ Localised ○ Consultative ○ Discretionary ○ Implementing ○ *Status quo* ○ Exposed
○ Generalised ○ National economic impacts ○ Wider public interest benefits	***Focus***	○ Specific / particular ○ Localised development impacts ○ Protection of local interests

Figure (2.6): Summary strategic-local tensions.

At one side of the relationship were the national government's strategic objectives, which might be assumed to reflect its analysis of public interest; like its commitment to global sustainability targets or its duty to provide an appropriate infrastructure, including housing and transport, for a growing economy. At the other side were local governments' responsibilities towards their local electorates and the realities, particularly regarding adverse impacts, of any strategic development. Tensions between these opposing ends were felt to have arisen because strategies were not implemented, at least as quickly as government expected, or because local people resented the imposition of unwanted strategic development, suggesting

that each partner in the relationship had different abilities and alternative attitudes towards the relationship. Figure (2.6) attempts to show these differences, as far as they affect strategic-local tensions, in terms of the actors involved, power characteristics, their legitimisation and focus. It is suggested that strategic-local tensions reflect a relationship of inequalities. National government as the initiator had a major responsibility to provide strategic direction based on its manifesto, national electorate, interpretation of the public interest and advice from special interest groups. Whilst this inevitably meant some locations would need to be developed in order to benefit the wider population, by setting out strategies, in the form of planning guidance, national government was generally distanced from the details of implementation. On the other hand, local governments as the implementers had to carrying out the realities of national strategies; they were exposed directly to locally aggrieved individuals, whilst plans and development approvals had to be decided in detail and not at an abstract, generalised level.

Yet despite these apparent inequalities, between national government as the central, reforming initiator and local government as the localised, exposed implementer, it seemed from the literature that the relationship has endured, for example through the Thatcher years, without undue capitulation on the part of local government. As has been suggested in this chapter, this may have been due to the use of discretionary powers, which were granted to local authorities in order they may translate strategy into action, but that appeared in reality to have been used to protect local interests, frequently by supporting the *status quo*. It was felt unrealistic to expect local actors to support national strategies in the face of fierce local opposition. In any case, local politicians had a duty to reflect local feelings and local planners had a duty to take into account local particularities. This dislocation in the strategic implementation process was felt to have two major effects. Firstly, that strategy may not be implemented uniformly across the nation, providing a basic unfairness and unpredictability in the system. Secondly, that an unpredictable process also generated, through the inevitability of judicial review, additional delays, costs and conflicts. It was thought these effects may have produced a basic unfairness in the system and that a better understanding of the dynamics involved may lead to ways of reducing the level of strategic-local tensions.

From a theoretical point of view the literature has provided a better understanding of the dynamics. Evans (1991: 886) highlighted the way, when he suggested planning invariably resulted in the maintenance of the *status quo*, because those in opposition to a development could not only exercise their voting rights, but also placed pressure on councillors, MPs and presented themselves at inquiries. Whereas those that might benefit from a development, for example, those without homes or jobs, were not directly involved and could not exercise their rights to the same degree. Whilst Evans found empirical evidence of a *status quo* culture within planning processes, the behavioural, social and political scientists have used its general existence to support their theories. Organisational behaviourists, Anderson and Kyprianou (1994: 189), described a common form of decision making as 'bounded rationality', as it involved finding solutions that were "*good enough*" to be "*acceptable*"; this process was said to often result in a 'no decision' or the maintenance of a *status quo* condition. From a

sociological point of view, Haralombos and Holborn (2004: 547) also recognised the tendency towards maintaining the *status quo* through 'non-decisions' and 'safe decisions'. They additionally cited John Urry, who felt those in power had used special interest groups to give the illusion of participation, yet allowed a stalemate to be created which protected the *status quo*. However, maintaining the *status quo* was not consistent with the aims of planning, which although involved protecting the natural and built environment were also said to be about meeting the nation's future needs. Healey (1998) described the twin strands of planning over the past century as those which concerned property rights and broader social, economic and environmental objectives. In recent years such objectives have been expressed in term of government circulars, then planning policy guidance notes (PPGs) and more recently Planning Policy Statements (PPSs). Had these guidelines overcome the *status quo* culture? It seem likely they had not, based on the weight of evidence presented. It was felt likely that planning strategy, as expressed through planning guidelines (PPGs/PPSs) was ineffectively linked to local implementation. In which case, it may have caused unnecessary conflict, costs and delay between national government, local authorities and those directly affected by the strategies. It seemed possible the current process may have also generated unnecessary tensions through both unrealistic and unrealised expectations. If so, it might be regarded as ineffective in delivering strategic objectives that would satisfy the wider public interest.

The basic research question, arising from Chapter One, had been whether future planning legislation and processes would provide a more effective, less conflict laden process for implementing national and regional strategic objectives at a local level. This chapter suggested, based on the literature, that the implementation of strategic objectives was influenced by the way local discretionary powers were used. If local powers were influential, then future planning legislation would need to be judged on its ability to improve the way they were used. Consequently it seemed that rather than question if new legislation might improve the implementation process, it was more important to first establish if discretionary powers did indeed result in a *status quo* culture that emphasised local concerns over national interests. As a result the basic research question was refined to pose a slightly different question:

Are centrally issued guidelines an effective means of implementing national and regional strategic objectives at the local level or has Britain's unique emphasis on formal local discretionary powers produced a process which too often supports local interests over those of the wider public and a culture that current planning reforms will find difficult to overcome?

The balance of this thesis is aimed at responding to the ideas embodied in this single question: are guidelines an effective means of implementing objectives; are local discretionary powers used to find solutions that enabled strategic objectives to be implemented locally with the minimum of local conflict; or are they used to react to local pressures; and did planning reforms recognise these possible issues and provide solutions? It was felt this would be best achieved by expressing the core relationships in the format of alternative and null hypotheses, as in Figure (2.7). The three null hypotheses were framed according to the government's assumption, that guidelines were an effective way of

transmitting policy and achieving strategic objectives, whereas three corresponding alternative hypotheses supported the opposite view. To conclude that the current process of guidelines and local discretion was less than effective, it would be necessary in the following chapters to reject the three null hypotheses. However, this would not necessarily mean the alternative hypotheses were accepted, since although a reasonable link between guidelines and development may not be found, it would not prove one did not exist, only that it was not found.

Null Hypotheses	**Alternative Hypotheses**
$H1_0$ *Despite strong local concerns, local authorities tend to accept government guidelines addressing wider public interest needs and approve strategic infrastructure development.*	$H1_A$ *Despite government guidelines addressing wider public interest needs, local authorities tend to accept strong local concerns and resist strategic infrastructure development.*
$H2_0$ *Local authority plans and decisions challenge the status quo and succeed in driving development needed for strategic purposes.*	$H2_A$ *Local authority plans and decisions tend to support the status quo and fail to drive development needed for strategic purposes.*
$H3_0$ *A reasonable (statistically significant) link exists between government guidelines and local outcomes.*	$H3_A$ *Only a weak (statistically insignificant) link exists between government guidelines and local outcomes.*

Figure (2.7): The main research hypotheses.

This chapter attempted to explore the relationship between strategic and local needs as a means of understanding if current reforms would address past concerns. It found, through an extensive analysis of planning, it's history, *raison d'être*, the public interest, conflict, decision making, politics and legislative processes, that strategic-local tensions were closely allied to the relationship between national and local governments and that they involved the manner in which local discretion and the wider public interest, as expressed through statutes and national guidelines, were exercised. Consequently, it was felt that before the question of current reforms could be addressed, it would be necessary to isolate the root causes of strategic-local tension, in order to show what those reforms would need to rectify. Since the literature pointed towards the role of guidelines and local discretionary powers the research question raised in Chapter One was refined to pinpoint these possible areas for reform.

The following chapter will pursue the refined research question, continue the process of using literature and develop the 'foundations' for the research; by initially exploring how planning effectiveness might be measured, outlining what was known about general aviation and discussing the factors that shaped the research, before identifying four objectives that would enable the three main research hypotheses to be tested. In line with Figure (1.2), Chapter Four will then develop the methodology needed to achieve those research objectives, allowing the remaining chapters to reveal the research results and reach conclusions about the research questions posed.

CHAPTER THREE: RESEARCH FOUNDATIONS

This chapter establishes the basis for the detailed methodology described in the following chapter. Building upon Chapter Two, using literature to develop a means of measuring planning effectiveness, it then defines and sets general aviation in an historical context, describes the concerns felt by the industry and reviews planning literature regarding general aviation, before addressing several methodological issues. Finally, it develops four research objectives and reviews contemporary concerns about the direction of planning reform.

3.1 Laying the groundwork

Aided by literature, the purpose of this chapter is to lay a foundation for the empirical research that follows in subsequent chapters. It will develop a broad understanding of the required methodology and establish objectives which may be used to test the hypotheses suggested in Chapter Two. The previous chapter provided a planning perspective on the main themes affecting strategic-local tensions, and then arrived at three research hypotheses. These hypotheses flowed from a refined research question, which essentially asked if centrally issued guidelines were an effective means of implementing national and regional strategic objectives at the local level. In line with Chapter One, Chapter Two had explored the relationship between strategic and local interests and provided a clearer understanding of the factors which might influence strategic-local tensions; for it was felt that without a reasonable understanding of these factors it would be difficult to assess if current reforms would improve strategic-local tensions or not.

In contrast to the generalised nature of the previous two chapters, this chapter will turn its attention to the specific; how the planning process operates within the UK and how the themes uncovered in Chapter Two may be related to the case study subject, the general aviation industry. Since the hypotheses questioned the implementation of planning guidelines, the chapter will initially consider how the effectiveness of planning processes might be measured. This will lead to a review of planning's procedures and the development of a possible framework for assessing local authority effectiveness when implementing guidelines. The chapter will then examine the background to the general aviation industry, its concerns relative to planning and the extent of relevant research, before discussing the factors that shaped the research approach. It will then develop the main research objectives. Finally, the chapter will end with a review of contemporary literature, which was available at the time research data were being analysed and conclusions reached. Having laid the foundations of the research activity in this chapter, Chapter Four will progress further into the specifics of this thesis, as depicted by Figure (1.2) in the first chapter; to construct the methodology for collating secondary data and conducting a local authority survey.

3.2 Evaluating planning effectiveness

In Chapter Two, by considering the generic meaning of planning it was found that planning as an activity involved methods, decision making and objectives; each of which, it was felt, might give rise to tensions and conflicts. Chapter Two went on to explore how conflicting objectives and inconsistent decision making might affect tensions and conflict, leaving an exploration of planning methods to this chapter. In this section, the aim is to develop a broad model for evaluating planning effectiveness, at a local authority level, whilst also continuing to identify possible causes of conflict and relate them to conclusions reached in Chapter Two.

Established models

The issue of how to measure planning effectiveness has been approached from the perspective of public service and/or organisational theory in general (Connolly *et al, 1980*; Cameron, 1986; Maynard-Moody, McClintock, 1987). Boyne has written extensively (1998, 2001, 2002, 2003, and 2004) on the subject of evaluating British public services. In part this reflects an increased interest in the subject, which he noted in 1998, arose from New Labour's desire "*to reinforce the emphasis on central control*" and its "*small, but significant, shift towards bureaucracy*" (1998: 47-49).

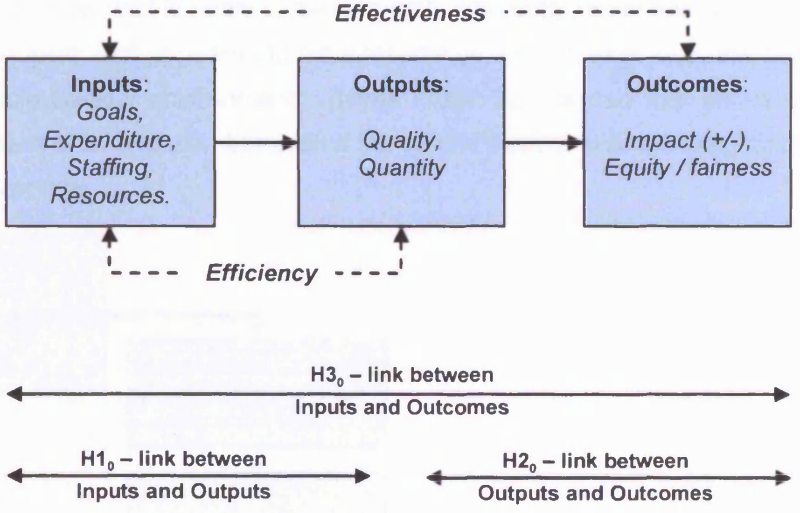


Figure (3.1): IOO model and the three thesis hypotheses (adapted from Boyne, 2002, 2003)

In 2002, Boyne (*ibid*: 17) usefully outlined a conceptual framework for statutory performance indicators, which included a simple, traditional input-output-outcome (IOO) model for describing organisational performance, as shown by Figure (3.1), where efficiency was defined by the relationship between input and outcome. A key distinction between outputs and outcomes was that the latter included secondary, often unwanted effects and impacts; for example, additional housing could increase traffic density. Another distinction, as regards public service organisations, was that the equity or fairness of the service was also felt important, as for example defined by the distribution of service by gender, race, age, income and geographical area (*ibid:* 18); a point that echoed the findings in Chapter Two concerning

the spatial variability of planning decisions. Figure (3.1) also serves to illustrate how the IOO model may be related to the three hypotheses developed in Chapter Two; H1 reflects the difference between inputs and outputs, H2 how outputs result in predicted outcomes and H3 the overall effectiveness between inputs and outcomes.

Pursuing a similar theme of organisational effectiveness, whilst acknowledging the limitations of the IOO model, Boyne (2003) has since considered five other established organisational models relative to public service improvement: the Goal, Systems-resource, Internal Processes, Competing Values and Multiple Constituency models. Three of these he discounted as not generally applicable to public service, leaving the Goal and Multiple Constituency models for discussion. The Goal model assumed organisations existed for a purpose and that this guided strategic direction. Maynard-Moody *et al* (1987: 126) defined goals as "*units of information that are understood by organizational members to define preferred collective outcomes at a specific moment in time*", so neatly linking goals as inputs which were directed towards an outcome. However, they also recognised the Goal model oversimplified organisations, since although individual or group goals may be consistent with broad organisational goals, they frequently conflicted with each other (*ibid:* 128); a point echoing the findings in Chapter Two concerning planning's objectives. The Multiple Constituency model was proposed by Connolly *et al* (1980: 212) on the basis that the answer to the question, 'How well is entity X performing?', inherently depended upon who was being asked; another point that appeared to have resonance with Chapter Two, this time concerning planning's socio-political environment. Boyne (2003: 220) added that actors used different criteria to assess effectiveness, but even if the criteria were similar the weightings would vary, particularly over time.

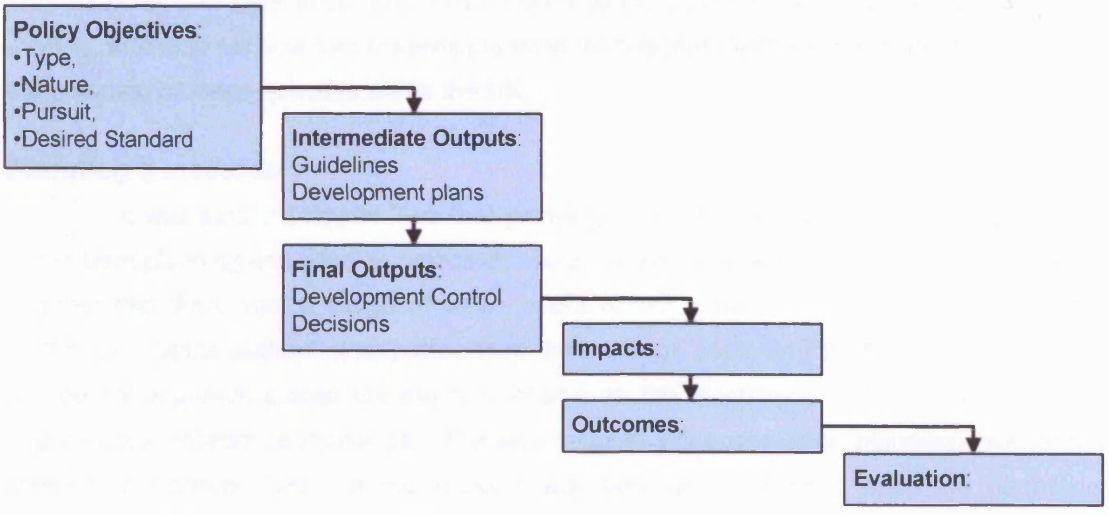


Figure (3.2): An evaluation framework for planning (adapted from Morrison, Pearce, 2000)

In terms of models specifically developed for measuring the effectiveness of planning systems, Gilg (2005: 49) has been dismissive of a generalised "*pseudo-science of public policy evaluation*", arguing land-use planning was one of the most complex state activities and so its evaluation was inherently the most complex. This was a point supported

by Connolly *et al* (1980: 216) who, although not referring to planning, felt models such as the Goal and Systems views were useful in describing organisational effectiveness, but were inevitably partial views. Even so, for his own evaluation of planning, Gilg adopted the elements embodied in a framework developed by Morrison and Pearce (2000), as illustrated by Figure (3.2), which resembled the traditional and essentially simple Input-Outputs-Outcome (IOO) model, previously illustrated by Figure (3.1). During his analysis Gilg (2005: 67) identified three major issues with evaluating planning: problems arising from 'gaps' between policy and implementation; the position taken by the evaluator (usually termed 'positionality'), which might cause a bias in results; and finally what he described as the 'what-if' effect, which caused development to be either displaced or deterred. All three issues, in view of their potential implications for the way the research might be structured and shaped, will be explored in greater detail later in this chapter (when addressing factors that shaped the research approach).

The main conclusion drawn from this examination of standard evaluation models was that they helped to define the key factors involved and distinguish between efficiency and effectiveness, outputs, impacts and outcomes. It was also felt the simple IOO model, when compared to other generic models, provided an adequate explanation of the main 'building blocks' necessary in any evaluative model. Even so, it was deficient in several respects; mainly because it did not recognise, unlike the Multiple Constituency model, the complexity of evaluation, which occurred at different levels and was determined by different criteria, set by different actors, both internally and externally. Whilst it appeared the model developed by Morrison and Pearce added some detail to what would be required in a planning model, it was noted that all the models were very linear and did not appear to recognise a feedback loop from evaluation to objectives. With this insight into the possibilities of established evaluative models, attention will now turn towards planning models that might define in greater detail how the planning process operates within the UK.

Planning's methods

It was said in Chapter Two that planning literature reflected different interpretations of the term planning and what its objectives were. In the same way, the literature appeared to suggest that there was a range of views about how it achieved, or should achieve those objectives. Some authors simply described the methods used, whilst others thought such a procedural approach placed too much emphasis on the mechanics and not enough on the implicit actor-network relationships. The less tangible influences upon planning were largely covered in Chapter Two. In this chapter, attention will be focused upon the normative, physical manifestation of planning activity, whilst also recognising the non-procedural aspects involved.

In a historical sense there have been two distinct methodological elements to the activity of planning; one that which anticipated the future and set the broad spatial framework, and one which controlled the particularities of development. The first was associated with a framework of plans, although as Hall (2002: 3) pointed out, these may not necessarily involve

physical 'blueprints' but were likely to include written statements, statistical projections, quantified evaluations and schematic diagrams, which could be regarded as administrative 'policy instruments'. Variously referred to as 'plan-making' and 'place-making' (*ibid*: 3; Healey, 1998: 7; Gilg, 2005 9), the function in local government has been commonly called 'Planning Policy' since it established the 'policy instruments' and set out their long term approach as formal policy contained within a 'development plan'. The second element of planning has been related to the processes of granting development permission and enforcing regulations, which in local government have generally been conducted by the 'Development Control' function. Consequently, Planning Policy and Development Control have been described as the twin components of formal state planning in Britain (Cullingworth, Nadin, 2006: 80). For the first half of the last century they were strongly connected. Development control was closely aligned to a detailed local authority "*surveyors' plan*" and only the approval of building bylaws provided any degree of flexibility (Booth, 2003: 77). But with the nationalisation of development rights and a broader definition of what constituted development, the 1947 Town and Country Planning Act linked them together in a more subtle way. As discussed in Chapter Two, the plan was not necessarily considered 'material' and each planning permission had to be considered on its merits (Cullingworth, Nadin, 2006: 108). This allowed local authorities greater flexibility over development, with the advantage that authorities also imposed 'conditions of use' upon developers. Since then, the link between plans and permissions have been partially re-established, in 1965, 1985 and particularly in 1991, when the local plan was made the primary consideration of development control, and the current 'plan-led system' was introduced (*ibid:* 113; Gilg, 2005: 31).

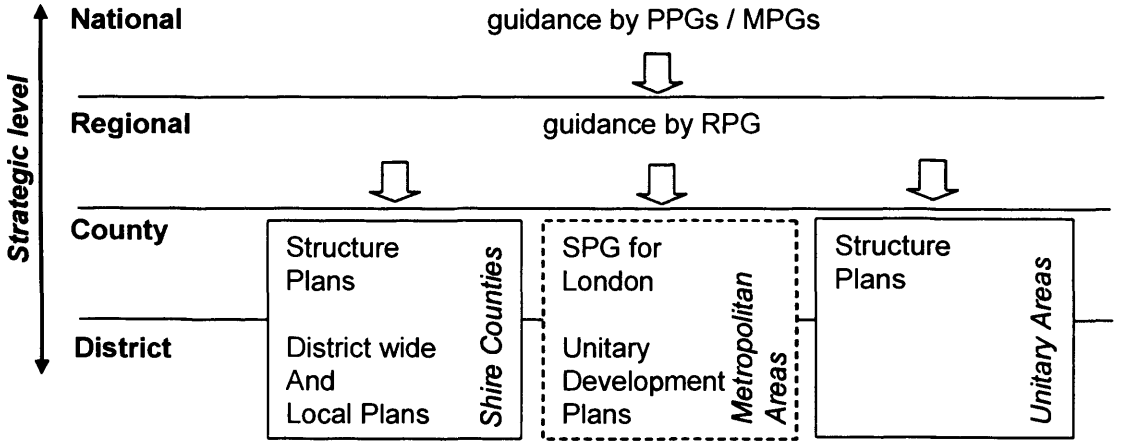


Figure (3.3): Strategic Planning Framework in England, 1995. (adapted from Thomas, Roberts, 2000: 28).

At the time the research was initiated, the system consisted of regional land use plans in the form of Regional Planning Guidance, County Structure Plans and Local Authority Plans, with the exception of the main metropolitan areas which, detached from the Counties, produced Unitary Development Plans. Figure (3.3) summaries the strategic planning framework for England; as based on a similar figure used by Gilg (2005: 22), which he adapted from Thomas and Roberts (2000: 28). At an implementation and operational level,

the task of local planners in preparing these development plans has been described as one of negotiating their way within a range of different actors. This included local politicians, statutory bodies, representative groups and governing departments, and a sequence of plan preparation stages which involve an initial assessment and survey, the preparation of the draft plan, its deposit for public consultation, a public inquiry and its final adoption or modification (Claydon, 1996: 112; Gilg, 2005: 19).

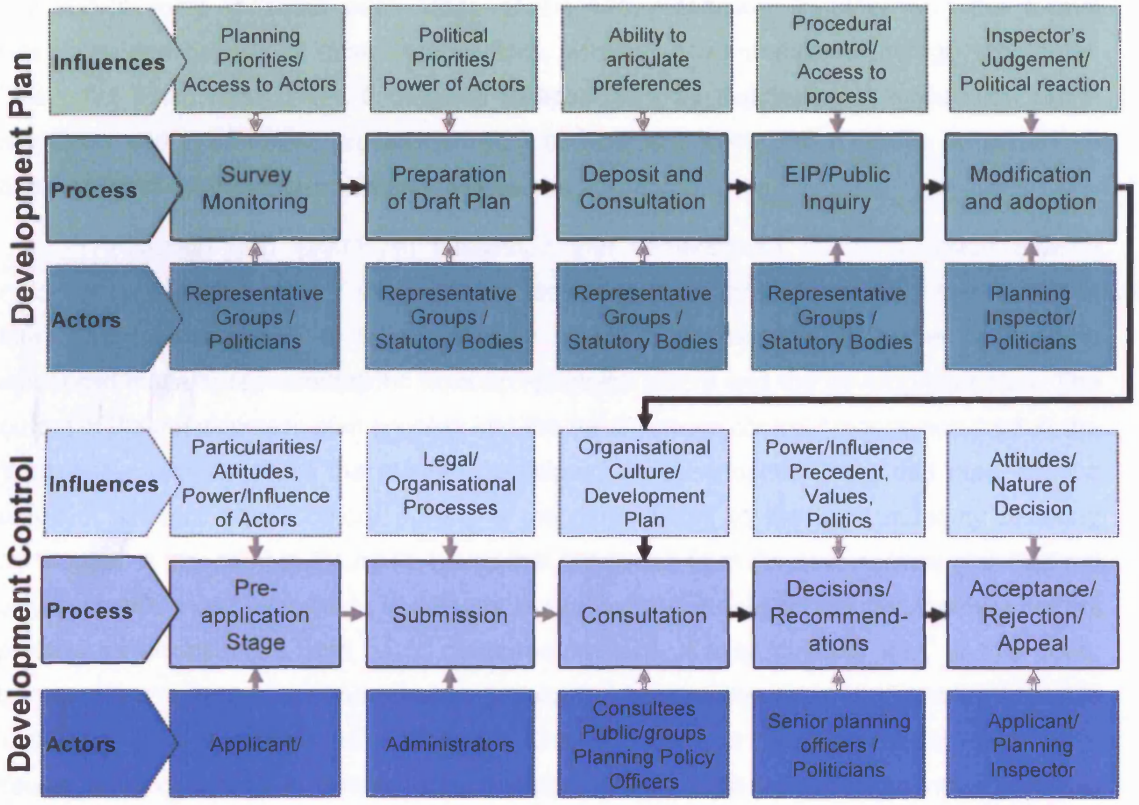


Figure (3.4): The Claydon planning process model (adapted from Claydon, 1996: 114, 115).

Claydon described how local planners in the development control function undertake a similar process; one that involves negotiating their way between a range of different actors, but which includes the applicant, politicians, statutory consultees and the public. Applications may be adjusted prior to formal submission, but after submission they must be assessed against the local plan and in conjunction with other interested parties, before a recommendation for unconditional acceptance, conditional acceptance or rejection was placed before the local council planning committee. The committee accepted or modified the planner's recommendation and if the applicant did not agree with the decision, they had the right to appeal to the planning inspectorate (Gilg, 2005: 33). Figure (3.4), based on work by Claydon (1996: 114,115), was compiled to show the combined operational processes for the development plan and the development control functions. It summarises the main process steps, the actors involved and the influences exerted by those actors and other legal processes. In effect, the output of the development plan process was seen as an input into the development control process, even though both shared similar influences and common actors. In Claydon's model, public participation was seen to occur through representative groups and

by providing access to comment, either on the development plan or on a particular application. To simplify its presentation, planning officers have not been explicitly included in Figure (3.4), although they would be involved in all the processes. However, other actors have been identified, including local government officials, elected politicians and representatives of statutory bodies, in non-governmental organisations and central/regional government. According to Claydon, attitudes, judgements and the power/influence of all actors, planning and non-planning, affected each stage of the two processes, together with the formal processes and outputs of other organisations, whether governmental or non-governmental. This point again reflects the findings of Chapter Two by suggesting a mixture of formal regulation and prescriptive procedures, with political and consultative advice tempered by organisational culture and individual attitudes.

Although Gilg (2005: 35) suggested that development control decision making processes were governed by three generic factors (government advice, case law and case lore), Claydon's analysis, as represented by Figure (3.4), identified two other factors that influenced matters; representations from non-planning actors and the development plan. The output of the development plan process into the development control process occurred at the 'consultation' stage, where the planner considered the development plan and input from a range of different actors before making a recommendation to the local authority planning committee. A key point in Figure (3.4) was that the output from the development plan had not only been influenced by a range of different inputs, but that it entered the development control process as an influence, and not a direct requirement. It may be seen that, at this point, between development plan and development control, local planners were arguably most able to exercise local discretion, as described in Chapter Two. The development plan may 'lead' development control, but ultimately the decisions taken might be based on other 'material considerations', which reflected the specifics of the planning application as against the generalities of the development plan.

By considering the specifics of planning activity, as illustrated by Figure (3.3) and Figure (3.4), the foregoing has both described a multi-level negotiated process and highlighted a potential for tensions and conflicts at many other levels, between all actors involved. For example, national guidance may not be translated into regional guidance, regional guidance may not be accepted by local government and local government proposals may not be approved by local politicians and other representatives. A conclusion was this variability in the planning process was critical to the focus on strategic/local tensions.

A potential local authority model

The question was how might this variability be measured? Cameron (1986: 542) suggested the issue was to select an appropriate model of effectiveness against appropriate circumstances, otherwise conflicts in perspective and approach would occur. As regards the circumstances, these were relatively predetermined, since as previously indicated in Chapter One, the research involved the 'testing out' of previous research including a survey of local planning authorities. Therefore, any evaluative model would need to be based on activities

and responses at a local authority level. As may be judged from the foregoing discussion there appeared to be no one model that was entirely appropriate, although each model had its virtues. Consequently, the approach taken was to merge the process models developed by Thomas, Roberts and Claydon, as illustrated by Figure (3.3) and Figure (3.4), which describe specific planning processes, with the 'building blocks' defined by the generic IOO and Morrison-Pearce models, as captured by Figure (3.1) and Figure (3.2), to produce a composite model. The combined model, as shown by Figure (3.5), would also allow for other apparent deficits. These included the absence of a feed back loop between evaluation and objectives and the findings of Chapter Two concerning planning's socio-political environment, which had also been reflected by Boyne's Multiple Constituency model.

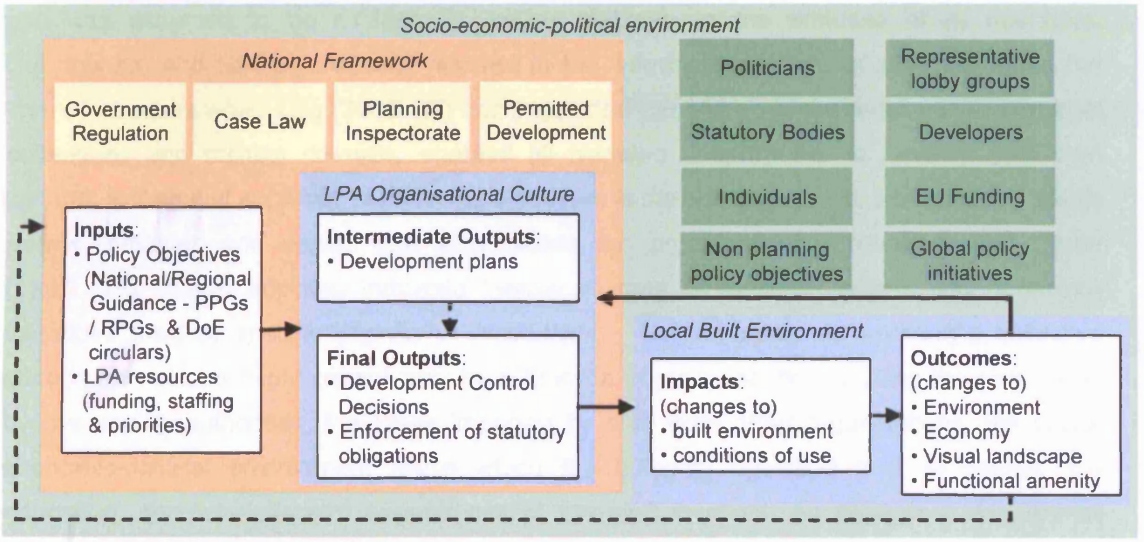


Figure (3.5): A potential local planning authority model.

The first point about the model depicted in Figure (3.5), was that it maintained the input-output-outcome (IOO) logic, except two feedback loops were included. One loop updated the local development plan, in the light of changes to the local built environment and the other loop modified the national framework. The latter reflected an assumption that if local authority outcomes were generally not in line with national government objectives, the government, under pressure from other interested parties, will take action to modify the legal framework. The second point about the composite model was that it operated within several hierarchical settings. At the local level the local planning authority was seen to possess an organisational culture, within which the development plan and development control functions existed. The local planning authority interacted with the local built environment, regulating development and updating its development plans as the built environment changed. At a national level, both the local authority and government planning administrators, responsible for setting national and regional objectives, operated within a national framework. The national framework was assumed to be based on regulation and case law and included an overseeing planning inspectorate, yet allowed the potential for development to occur outside of local authority control, using permitted development rights. In turn, the national framework, the local authority's organisational culture and the local built environment existed within a wider

socio-economic-political environment, which manifested itself in different ways at international, national, regional and local levels.

This socio-economic-political environment included a broad range of actors interested in planning issues, some of which are illustrated by Figure (3.5). These actors were assumed to influence actions at various levels, just as according to the Multiple Constituency model, they formed judgements about the effectiveness of planning. Interactions were not shown specifically between all actors in Figure (3.5) as they were too complex to illustrate diagrammatically, but as suggested by the Claydon process model, Figure (3.4), attitudes, power, influence and values operated at various points and levels upon the local planning authority organisational culture. Culture was independently developed by all organisations and was assumed to be evident, to varying degrees, in the attitudes of its members. Cullingworth and Nadin (2006: 80) referred to the 'informal' workings of planning within the 'formal' structure whilst Gilg (2005: 35) has suggested 'case lore', or the received wisdom from colleagues and training courses, enabled all planning departments to develop their own culture. Williams *et al* (1996: 14) have said "*Culture is the commonly held and relatively stable beliefs, attitudes and values that exist within the organisation*". Greenberg and Baron (1997: 178), stated attitudes indicated "*stable clusters of feelings, beliefs and behaviour intentions towards specific objects or institutions*". Consequently an authority's collective attitude and culture might conceivably be a function of many inputs; including the view taken by overseeing authorities, the ideas imported by staff from other organisations, the socio-economic-political environment within which the authority operated and, of course, the education, competences and experiences of the staff involved. As Musgrave and Anniss (1996: 181) suggested the culture of an organisation "*is represented by the customs and values that are generated within it*".

A key point illustrated by Figure (3.5) is that the linkages between the input-output-outcome stages are not directly connected. Instead it was felt they operated through related actors, for example, the local authority culture provided the conduit through which national and regional objectives flowed. This has been indicated by the connecting arrows, which do not directly connect policy inputs to development plans or development control decisions, but are shown to connect indirectly through the organisational culture. Equally, it was suggested the local authority development plan only influenced development control decisions and that it was based on a perception and interpretation of the local built environment, rather than purely a mechanistic blueprint of development. The local authority's perception and interpretation was assumed to be a function of its organisational culture, in that it would choose to prioritise and select development that matched its wider aims and values. Equally the local authority output, as expressed by development control decisions, was shown not to directly cause impacts within the local built environment, since these decisions may or may not be accepted and acted upon by applicants.

It may be drawn from the foregoing that although planning processes had been set out by some authors in clearly described and prescriptive stages, they were in reality subject

to a wide range of subjective influences, political, behavioural and organisational, which made outcomes less predictable. This conclusion was supported by the findings of Chapter Two, which suggested that strategic-local tensions were closely allied to the political relationship between national and local governments and decisions made involving local discretion and the wider public interest. The intention was to gather, via a formal transparent, value-free process, sufficient quantitative and qualitative information to enable an informed and balanced judgement, which was robust enough to be tested by the planning inspectorate. However, the effect of the influences acting on the planning department and its officers would seem, as Gilg (2005: 36) commented, make it "*unwise [...] to assume any two planners will come up with the same recommendation*". Whilst some variability was to be expected, due to small differences of particularity and emphasis, Gilg appeared to underline that variability was significant and critical to any examination of strategic-local tensions.

An informed approach

The foregoing has outlined a potential model for evaluating planning effectiveness. It became clear, based on a review of generic evaluative and specific planning process models, that no single established model would fully describe the complexity of the situation. Mindful of this, the approach taken was to construct a local authority model which incorporated the key elements of the generic models and included the findings of Chapter Two concerning planning's socio-political environment. The result was a model that although based on a traditional Input-Output-Outcome framework, recognised several hierarchical settings, including the local authority organisation culture, a national framework for planning and a wider socio-economic-political environment. As such, it included an extensive range of actors interested in planning issues and emphasised gaps between the formal 'building blocks'. These gaps were seen as potential sources of strategic, local and strategic-local tensions resulting from the existence of organisational cultures and different perceptions between actors.

Chapter Four will outline the methodology to test the three research hypotheses and describe how it was influenced by the local authority framework presented in this chapter. But before reaching this stage, the following two sections will develop several aspects of the research that also influenced the methodology; including how much was known about general aviation and three critical issues, mentioned earlier, that were highlighted by Gilg (2005: 67).

3.3 What was known about general aviation

The purpose of this section is to provide a background concerning the general aviation industry, as it was understood when the research was began. It will define general aviation in broad terms, provide an account of the historical development of general aviation flying sites, draw upon the published concerns within the industry and then link them to the findings of the ESRC report.

Aviation related terms

Until this point it has been assumed the terms 'general aviation' and 'aerodrome' were generally understood. However, in order to proceed on a common basis, the following will briefly define these terms as they are used and published within the industry. Any other technical terms and related aviation acronyms used in this thesis have been, and will continue to be, explained as they occur.

Regarding 'general aviation', there are broadly three sectors within the aviation industry: Military, Commercial Air Transport (CAT) and General Aviation (GA). The latter encompasses a wide range of craft from conventional aircraft to helicopters, balloons and gliders and its activities include the emergency services, business aviation, pilot training, aerial surveys and leisure aviation (GAAC, 2002a). Yet whilst GA may be recognisable to those involved, its precise definition was difficult to pinpoint, for there were many definitions. The most widely quoted has been the International Civil Aviation Organisation's (ICAO) Annex 6 version which was agreed in 1968, but there has since been a consensus within the British GA community that this definition was now outdated (CAA, 2006a: 3). In the absence of an agreement on a refined definition, this thesis was based on the following, which was derived from a commonly quoted version used within the industry (BBGA, 2005: 4).

> *"General Aviation covers activity arising from all aircraft except those owned by the major airlines and the Armed Services"*

Whilst the ESRC research referred to 'airfields', as may have been noticed, this thesis has adopted the term 'aerodromes'. An '*aerodrome'* has been simply described as any 'formal' flying site, although the UK regulatory definition, as defined within the Civil Aviation Act, Section 105, is more precise:

> *"Aerodrome means any area of land or water designed, equipped, set apart or commonly used for affording facilities for the landing and departure of aircraft and includes any area or space, whether on the ground, on the roof of a building or elsewhere, which is designed, equipped or set apart for affording facilities for the landing and departure of aircraft capable of descending or climbing vertically." (CAA, 2006c)*

Aviation purists have argued that all civil flying sites ought to be correctly termed aerodromes and that only military flying sites are entitled to be called airfields. In the following, this purist approach will be generally embraced, except when it is useful to distinguish between extremes; as for example, between large airports, small grass strips and helipads. Military airfields, model aircraft and hang-gliding sites were not directly covered by the research.

A brief history of British aerodromes

The history of GA extends into the last century, to the same period that witnessed the beginnings of the modern British planning system. In 1909, the same year as the first Housing, Town Planning Etc. Act was passed by Parliament, three of the first aerodromes in England were opened at Blackpool, Leysdown and Eastchurch, without any need for planning

approval (Woodside, 2002). Indeed during the first half of the century the new planning process was barely involved in the creation of new aerodromes (Gallent et al, 2001: 197). This was because most sites were developed by the military in response to war, although the first formal aerodrome, built at the Brooklands motor racing track in 1907 was an exception (Woodside, 2002). By the end of the First World War there were 301 flying sites. As they all had grass runways and limited facilities, most were quickly returned to agriculture after the war, with the result that by 1924 only 27 military airfields and 17 civil aerodromes remained in the country (Brooks, 1998: 21). This pattern of airfield expansion during war time and extensive closure afterwards was repeated by the Second World War. By December 1944 there were said to be 653 flying sites (including 15 flying boat bases), of which only three were used for civilian purposes. Most were built with hard surfaces formed from materials such as concrete and tarmac mixed with wood chipping. A massive closure program followed as the military withdrew from 480 sites in a matter of a few years. As they withdrew, some sites were converted to civil aviation use, but most were returned to agriculture, developed as industrial/housing sites or simply abandoned. A sample of 153 aerodrome closures since 1950, suggested 24% were returned to agricultural use, 21% were developed as industrial estates, 20% became 'disused' and 12% were used for housing (King, 2002). The remaining sites were utilised for sundry purposes, including eight prisons and three nuclear power stations. Today, of the three sites opened in 1909, only Blackpool remains an active aerodrome.

It may be concluded from this brief outline of the historical evolution of flying sites that the GA industry had grown rapidly over the past one hundred years, driven by the two World wars with each causing a hasty increase, then inevitable a matching decrease, in the number of aerodromes. Despite the closures, many new sites have since been created in peacetime, such that Lord Rotherwick, as President of the General Aviation Awareness Council (GAAC), suggested there were now over 10,000 GA aircraft operating from 490 aerodromes and private airstrips (Hansard, 2001; 27th Feb. Col. 1205). However, as will be revealed later, these particular statistics were not quite as clear as his statement in the House of Lords inferred.

The current regulatory framework

The specific regulatory instruments for controlling flying are contained within the CAA's publication, CAP 393 (TSO, 2005). It details the provisions of Air Navigation Order 2005, or ANO, and subsidiary civil aviation regulations, including The Rules of the Air Regulations, The Air Navigation (General) Regulations, the Air Navigation (Cosmic Radiation) (Keeping of Records) Regulations, the Air Navigation (Dangerous Goods) Regulations and a number of permanent Air Navigation (Restriction of Flying) Regulations. It also contains the provisions of the Civil Aviation Authority Regulations, which describe the registration, licensing, documentation and rules, covering aircraft, pilots and aerodromes. The emphasis is on security, safety of air travel and the role of the Civil Aviation Authority. The rules are not intended to conflict with or supplement land use planning regulations.

The planning regulations, which affect aviation, are to be found within the Town and Country Planning Acts. Although the new Planning and Compulsory Purchase Act 2004 brought changes to old style planning policy guidance (PPGs) through the transition to planning policy statements (PPSs), the earlier enactments of the Town Country Planning Act 1990 and the Planning and Compensation Act 1991 still apply for those PPGs not yet superseded (ODPM, 2006a). The most relevant guidelines for aviation (ODPM, 2006b) are to be found within PPG13 (Transport) and PPG24 (Noise). There are also aspects related to aerodromes in PPG4 (Industrial and Commercial Development) and PPG17 (Sport and Recreation). PPG2 (Green Belts) covers the general issue of safeguarding, whilst the CAA's document CAP 738 (CAA, 2003) and GDPO Circular 01/2003, detail the approach with regard to aerodromes identified as strategically important, and the means by which any other aerodrome may seek protection. In the context of aerodromes, the term *safeguarding* means action taken to protect sites from development that would be detrimental to flying activities; for example the erection of tall radio masts or an intensification of bird life near landing sites.

The Town and Country Planning General Permitted Development Order (GPDO) 1995, additionally sets out the circumstances under which aerodromes may develop without the need for specific planning permission (Part 4 and Part 18). Part 4 (Class B, Schedule 2) relates to a general dispensation for flying and similar activities like motor sports, which enables land owners to operate small flying sites for a maximum of 28 days in any one year without prior permission (many private flying strips are known to operate under this ruling). On the other hand, Part 18 is specific to aviation development. There are nine classes, from A to H, that might apply. Classes D to H concern development by the CAA in relationship to air traffic control installations, whilst Classes B and C relate to similar development undertaken by an airport operator, rather than the CAA. Consequently, only Class A relates to more general aviation based development. It specifically excludes the construction or extension of runways, passenger terminals or any non operational buildings, but does allow development if it is urgently required for the efficient running of the airport. However, this concession is limited to a structure not exceeding four metres height or 200 cubic metres capacity; a dimensional constraint that in aviation terms equates to a small hangar, capable of housing one or two light aircraft.

The transport guidance, PPG13, has the most significance to GA, even though the relevant sections are embedded within the appendices to the main document. For example, item 6 of Annex B to PPG13 seeks to ensure that local authorities "*consult with the DETR's (now DfT) Airport Policy Division on draft development plans*" concerning aerodromes. In particular it requires them *to "identify and where appropriate protect sites [...]. both existing and potential (including disused sites) which could help to enhance aviation infrastructure".* Item 8 also suggests that "e*xisting sites with established aviation uses, including redundant military aerodromes, will often provide the best opportunities".* In item 5, PPG13 also requires local authorities to consider "*the role of small airports and aerodromes in serving local business, recreational and emergency service needs*". Furthermore, it anticipates that the growth in Civil Aviation will displace GA activities and that local authorities need to "*take*

account of the economic, environmental and social impacts of GA on local and regional economies". When PPG13 was revised in March 2001 it was seen by the aviation community as an important step towards protecting existing and potential flying sites (Kember, 2001).

These national guidelines, PPG13 regarding the role of small aerodromes and GDPO Circular 01/2003 regarding the safeguarding of flying sites, represent the main input to local authorities regarding the specific treatment of general aviation sites. Consequently, they will be returned to later when considering how to measure the effectiveness of national guidelines as required by the three hypotheses developed in Chapter Two.

An industry under threat?

The research soon revealed that for more than a decade, the individuals and companies involved with GA have felt they were 'under threat' from external pressures, which had caused aerodromes to be closed, flying to be restricted and costs to increase (AOPA, 1992: 7). This feeling became increasingly more pronounced in recent times, as was regularly reflected by the popular GA press (Flyer, 2006: 3; General Aviation, 2006: 5). It was said to have had its origins in a succession of local airfield closures in the 1990's, most notably Ipswich, West Malling, Leavesden, Hatfield, Burnaston and Doncaster, although it was sometimes forgotten that London City, Egginton and Sheffield were opened over the same period (Kember, 2001: 40). Each closure was hotly contested by GA activists and seen to be significant to the overall network.

The formative stages of the research coincided with a significant House of Lords debate about GA, which articulated the feelings of the day. It was held on 27th February 2001, which was at the time of the Government's consultation paper "The Future of Aviation" and a revision of PPG13, which as noted above was the main planning policy guidance affecting GA. Opened by Lord Rotherwick, President of GAAC, supported by Lord Brabazon, Viscount Goschen and The Earl of Liverpool, then answered by Lord MacDonald, the debate articulated the main concerns of the GA community. It was said the GA industry believed it was being displaced from the main civil airports, at risk through the continued closure of smaller ones, and under pressure through the imposition of planning conditions and the anti-general aviation stance taken by some local authorities (Hansard, 2001: 27th Feb. Col. 1214). There was concern that the escalating costs of operating light aircraft were placing flying beyond the reach of younger generations and that this would ultimately lead to a shortage of commercial pilots. It was also alleged that the infrastructure was in decline, as a number of significant aerodromes were being considered as prime locations for housing. Since the authorities did not view these sites as important to local or national economies, the prospect was for a diminished flexibility in business aviation use with subsequent impacts on business in general. The debate went on to call for public inquiries in the event of a proposal to close an aerodrome and for a national policy regarding general aviation.

The Government's response was that it wished to promote every area of UK aviation from major carriers to smaller enterprises. It recognised the contribution made by GA in all its

guises and it hoped the White Paper would cover many of the issues raised. As to the role of planning in the development of aerodromes, it was said the 'plan led' system required developments which were not in the plan, to be justified on the basis of material considerations, and that the courts were the arbiters of what constituted a material consideration. The Government also highlighted, that the Town and Country Planning (General Permitted Development) Order 1995, enabled some forms of development related to aviation to proceed without planning permission. Aerodromes were seen as local planning matters, which should be decided locally, leaving only matters that had implications for national policies, for example national security, requiring central government intervention. The Government did not accept the issue of airfield closure, saying the number of airfields had been close to its present total for some years, and any recent changes did not present a national trend. The Government concluded that it had on several fronts, acted to promote general aviation, but that none the less the industry should continue to make its voice heard.

A conclusion drawn from this debate and other articles published at the time was that activists, within the GA industry and flying community, clearly felt under pressure from different directions, and that the planning process was a critical element in regard to the existing network of flying sites. Indeed, this was a common thread that ran through both sides of the debate since supporters and critics of GA referred to planning as the "*battleground*" (A4A, 2002; Rea, 2001). For instance, the main pressure group formed to monitor GA activity, the Aviation Environment Federation (AEF), held a seminar at the time, which made it clear the planning system was seen as the only statutory means of controlling noise and other environmental issues associated with aerodromes (Johnson, 2001).

Prior general aviation research

A literature review conducted during the early stages of the research showed there have been almost no substantive investigations into the issues facing GA, let alone the role played by land use planning. The only academic research had been a PhD thesis by Ron Blake in 1989, titled '*The development of military and civil airfields in the UK since 1909*' and the previously mentioned ESRC project '*Alternative Land Uses on Small Rural Airfields*' by Nick Gallent and colleagues. Blake's work was essentially a descriptive, historical account of the development of aerodromes whilst the ESRC research, albeit aimed at the non-aviation use of aerodromes, had uncovered issues that where relevant to the current research. As such it represented the only substantive research in the area.

The ESRC study confirmed that aviation users saw themselves as under threat, that aerodromes were controversial locations in planning terms and there was considerable pressure on planners to restrict flying activities, although it uncovered little evidence that planning officers actively sought to close sites, indeed planners appeared to accept the right of flying as a legitimate activity (Gallent et al, 2001: 254). There was some evidence that planners had strayed, in the absence of better measures, to regulate flying by methods such as 'off the ground' manoeuvres, and consequently both sides sought more sophisticated controls that were better related to environmental considerations. It was felt a closer liaison

with the CAA would be of benefit and there was a need for a wider perspective, at least at regional level, to preserve an adequate distribution of sites, which would avoid the disposal of sites without a proper consideration of the issues.

Apart from these sources, there appeared to be no text, which comprehensibly described GA in all its facets. Knowledge was held by those involved in GA, and documents existed about certain aspects, but there was no clear statement describing the scope and shape of GA. There were books on the historical development of aircraft, flight guides detailing available aerodromes and CAA data on aircraft registration, aerodrome movements and pilot licensing. But even the CAA only partially described the situation. The CAA maintained a record of aircraft registration data, but this included many inactive aircraft, did not include foreign registered aircraft or gliders, nor did it distinguish between GA and CAT. Aerodrome movements were monitored only at those sites involving CAT, and there was no formal grading of sites or a clear method for establishing how many active pilots there were.

It seemed as if the incomplete nature of its secondary data reflected the spatially disparate and technically complex character of GA. In the absence of previous academic research, or a comprehensive source of statistics, it was felt that any study of the industry would need to better understand its shape and scope, before proceeding with the main research effort.

A disparate and incomplete account

In the foregoing discussion the background to the GA industry has been reviewed, based on published material available when the research started. It has defined GA in broad terms, provided an account of the historical development of GA flying sites, described the concerns felt within the industry and then linked them to the findings of the ESRC report.

In terms of previous research, apart from the ESRC study, and a multiplicity of secondary data sources regarding the technical aspects of GA, there appeared to be a conspicuous lack of research into GA's wider issues, and in particular its relationship with planning. Simple questions like how many aircraft, aerodromes or pilots were there could also not be answered, and it became clear a significant level of preparatory work was required before the main research effort could begin. As mentioned previously other issues also needed to be factored into the research approach, including those highlighted by Gilg earlier; as will now be discussed.

3.4 Factors that shaped the research approach

The purpose of this section is to discuss the main factors which shaped the research approach, in order to provide a background to the research objectives ultimately developed, as will be set out later in this chapter. In Chapter One, it was said the research was proposed "*on very similar lines to the ESRC project; a precursory investigation of secondary data, a survey of local authorities and field visits to both flying sites and local planning authorities. In effect it was seen to be a 'testing out' investigation of previous research*". A basic research question emerged in Chapter One, which was then refined in Chapter Two and three hypotheses

developed. They questioned if Britain's discretionary approach limited the effectiveness of national guidelines relative to the planning system. In this chapter a possible local authority model was discussed for evaluating planning effectiveness. Yet, whilst adopting a similar approach to the ESRC project may have appeared a straightforward research approach, several other factors needed to be considered. They would also shape the approach taken and enable the research to develop along its own path. Accordingly the following factors will be discussed: the three evaluation issues previously highlighted by Gilg (2005, 67), concerning 'positionality', 'what if' effects and 'implementation gaps'; the 'testing out' approach taken; and finally, the issue of GA's 'economic significance'.

Bias weighed against access

As stated in Chapter One, the research was sponsored by the General Aviation Awareness Council (GAAC) and the Department for Transport (DfT). This sponsorship arrangement inherently raised an issue of 'positionality', one of the three evaluation issues highlighted by Gilg. Since the agreed aim of the research was "*To significantly increase the body of knowledge about GA in the UK; its current infrastructure, role within the economy and relationship with England's planning process*", it may have appeared the emphasis was on investigating the GA industry relative to planning, rather than the other way around. Certainly the view held by the aviation sponsors was that a better understanding of GA by planning would be of advantage to the industry. But it was also clear the writer's interest in the subject matter, as a private pilot (since 1998), was a potential source of bias.

Academic opinions provided some guidance on the situation, where the observer-author relationship may not be as neutral as has sometimes been portrayed by traditional researchers. It was said that a more reflective approach could to be adopted, which acknowledged the researcher's choices both as author and observer, and the position in which the researcher viewed reality (Bryman, 2001: 469; May, 2001: 47; Gilbert, 2003: 355). Yin (2003: 59) noted that researchers should ask good questions, be good listeners, flexible and adaptable, have a firm grasp of the issues and be unbiased by preconceived notions. But, he went on to say, that any absence or deficiency in these attributes could be overcome by an honest self assessment. Although a first reading of Yin's attributes appeared to confirm the writer was inherently biased in favour of GA, and that this carried with it preconceived notions of planning's treatment of aerodromes, it was clear from other references that such a bias was not an unusual situation. Bryman (2001: 22) listed a range of different points at which bias and the intrusion of values may occur, including the choice of research area, the formulation of design, interpretation of results. Citing work by Becker and Turnbull he also highlighted a researcher's frequent desire to support the 'underdog' and in contrast the 'disgust' sometimes felt towards those observed. Interestingly, Bryman (*ibid*: 23) also drew attention to the view taken by feminist writers, that under certain circumstances the postulate of 'value free' research could be supplanted by 'conscious partiality'. This view was not adopted by the writer, since it could not be argued the case for greater awareness of GA issues even approached that for such causes, but it did serve to illustrate that a bias might be channelled

and viewed positively. This possibility, to use a bias to an advantage, was seen in the access provided to the writer, by virtue of being a pilot. In Chapter One, it was argued general aviation might be regarded as a 'revelatory' case, which was one where an investigator had the opportunity to explore issues found elsewhere, but at a level previously inaccessible to scientific investigation (Yin, 2003: 42). This view of accessibility was supported by Stake (1995: 4) who felt the ease of access and willingness of participants were important determinants in the selection of a case study.

Allied to the conscious decision to take advantage of the writer's access to GA, was the equally conscious decision not to actively seek access to those critical of GA, such as the AEF and other pressure groups representing the anti-aviation lobby. This decision was based on ethical and data reliability grounds. It contrasted with the ESRC researchers, who, given they had no declared bias towards GA, had no reason not to interview, for example, the AEF, as a counterpoint to their interview of the GAAC. Given the writer's assumed bias in favour of GA, it was felt the only ethical way to approach such groups would have been to openly declare a personal bias. But, it was felt in doing so this may have increased the risks associated with participant-observer bias (Yin, 2003: 94). In essence, interviewees may have overemphasised their positions as a response to the writer's perceived misconceptions. It was thought this would have caused significant difficulties in evaluating responses. As an insider speaking to GA participants, however, it was felt the situation would be reversed, given the writer could more reliably interpret the intent of individual responses. There was also a danger of appearing to seek a 'token' representation from the 'anti-aviation' lobby, given the access to GA was inherently much greater than to its critics. An alternative position was therefore taken, not to interview known critics of aviation but equally to disregard subjective information from GA participants which could not be substantiated, or if such information was felt of assistance, then to recognise it as unsubstantiated in the text.

A conclusion drawn from the foregoing was that all research was inherently biased but researchers should recognise their position and perhaps turn it to an advantage in order to advance knowledge. As Gilbert (2003: 356) advised "*make an argument supported by your data, but don't apologise and look inward*".

Evaluation issues recognised by others

In addition to positionality, Gilg served to highlight two other potential issues when evaluating planning; 'implementation gaps' and 'what-if' effects. These will now be discussed, starting with the question of implementation gaps. The preceding sections have suggested several potential 'gaps' between actors and processes. For example, Figure (3.5) illustrated policy inputs to development plans or development control decisions, were not directly connected, but operated indirectly by way of the relevant organisational culture. Other authors have also referred to problems encountered between policy and implementation. Allmendinger and Thomas (1998: 12) reference a study by Hogwood and Gunn in 1984 which identified ten possible causes that were "*limits to administration*". These included resources, a clear link between cause and effect, well defined objectives, perfect communication and a

compliant local authority. Kingdom (2000: 461) found the idea of a compliant local authority, or obedient civil service bureaucracy an outdated notion. This was on the basis that policy was formulated in the knowledge of how it would be implemented and, in any case, public servants did not implement policy "*like robots*". Cullingworth and Nadin (2006: 8) also felt it was a "*simplistic view that there is a logical progression through the successive stages of 'planning', culminating in implementation*". Greed (1996: 268) felt there were two different meanings of implementation, one based on conformity with statutory requirements and the other seeking broader objectives "*by whatever means possible*". Cullingworth and Nadin have taken a less positive position, identifying a range of different, but acceptable reasons why outcomes should not match objectives. Interestingly, they noted that although planning was "*a hazardous exercise, with serious likelihood of failure*", it was a "*surprise that there have been so few analyses [...] to fill the vacuum*". Preece (1990: 59-73) usefully identified, for those seeking to fill the vacuum, a number of criteria for ensuring a rigorous evaluation, including replication and the falsification (rather than confirmation) of hypotheses. Interestingly Gilg (2005: 154) concluded Preece's criteria had rarely been satisfied by researchers and that most planning evaluations have therefore been imperfect, but worthwhile explorations.

This diverse range of views, although suggesting the issue of implementation gaps was significant, did little to progress the objective of measuring effectiveness. Whilst it was felt the disconnects between inputs, outputs and outcomes, due to the existence of organisational cultures and different perceptions between actors, illustrated by Figure (3.5), provided a possible explanation of the variations in efficiency and effectiveness over the entire process, it was decided the model was too complex to use as an evaluative tool. Figure (3.6) was subsequently developed, as a simplification of the earlier local authority model.

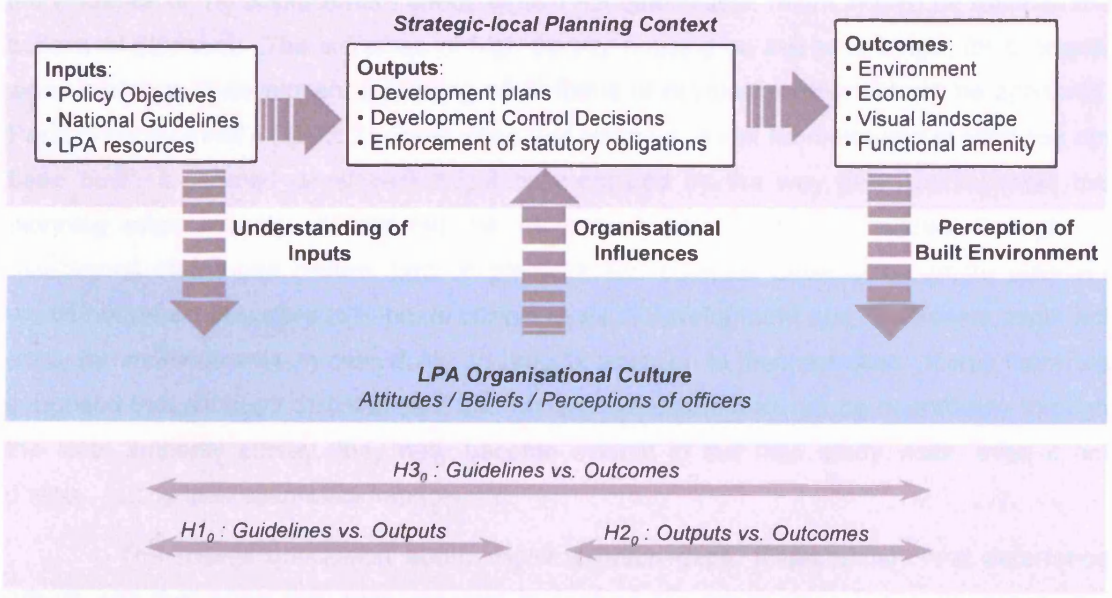


Figure (3.6): A framework based on the LPA model.

It included the main elements of the IOO model, set within a strategic-local planning context, and how they were related to the three hypotheses developed in Chapter Two

through the organisational culture of the local LPA. The hypotheses were seen to test 'horizontal' linkages in a 'direct' sequential process, whereas the role of the local LPA organisational culture was felt to operate in a 'vertical' and 'indirect' way, and could be recognised in three distinct ways. Firstly, in that it would shape the views held by planning officers of policy inputs; meaning in this context of strategic-local relationships, how it would choose to understand national guidelines. Secondly, the officers of the LPA might be expected to share a general perception of the outcomes, or the current state of the built environment in terms of the environment, economy, visual landscape and functional amenity. Finally, the combined effect of an understanding about policy and a perception of the built environment, were suggested by Figure (3.6) to indirectly influence the outputs from the LPA based on the common beliefs held by the planners involved. It was felt that by simplifying the previous model into a workable framework, by disaggregating the horizontal and vertical linkages that acted directly and indirectly, it might be possible to gain a closer insight of the issues experienced by others when attempting to evaluate planning effectiveness. Consequently, in Chapter Four, this simplified framework will be applied to the specific case of a local authority survey with GA aerodromes.

Undeterred by Gilg's comments on implementation gaps, the next issue to be considered were what he had called 'what if' effects. These were to be found, where knowing the likely reaction of the planning system, developers were either 'deterred' from development or their development was 'displaced' elsewhere. Gilg (2005: 67) asserted these effects were "*virtually impossible to measure*", and so he focused on other issues. However, it was felt the research should at least anticipate these effects and consider how their existence might be reflected in the analysis. As described in Chapter Two, work by Evans (1991) had suggested the evidence of the displacement effect, even if not quantifiable, might indeed be found in the actions of planners. The extremes of high density housing on the rural fringe, for example, were evidence of developers accepting other forms of development would not be approved. Paraphrasing Greed's (1996: 2) observation that planners "*might be measured in what has not been built*", it seemed developers might be measured by the way they circumvented the planning rules. Equally, it was felt the deterrence effect might be evident through an established *status quo* culture, both in planners and potential developers; where planners would not proactively seek to improve certain types of development and the owners might not apply for improvements, in case doing so brought attention to their activities. It was therefore supposed that although displacement and deterrence effects may not be quantifiably through the local authority survey, they may become evident in the field study visits, even if not directly, but by their secondary impacts.

The overall conclusion about implementation gaps, displacement and deterrence effects was that whilst they may conspire to confuse the conclusions eventually drawn, the approach of a survey followed by field visits was a reasonable methodology to adopt, and one that should enable some advance in understanding of these and other issues, particularly if they provided some insight into the nature of strategic-local relationships.

Forming the 'testing out' approach

As discussed, the only substantive academic research into planning's role had been the ESRC report. An initial evaluation of the report, however, pointed towards several gaps and issues which might have affected its overall conclusions and so prompted the 'testing out' approach, as outlined in Chapter One. The following will now discuss these issues, how they were addressed, and then incorporated into the main research program.

The first issue identified concerned the depth of secondary analysis undertaken. As has been described, the existing secondary data sources for GA were found to be disparate and unconnected, such that it was impossible to find a comprehensive account of the industry and simple statistics like the number of aircraft, aerodromes or pilots were not known with any certainty. The concern was that without a comprehensive understanding of the case study background, the ESRC researchers may have missed key trends and relationships that would have otherwise influenced their report. At its simplest level, it questioned the researchers claim to have sampled 50% of the sites in England and Wales (Gallent *et al*, 2001: 217). The ESRC researchers had analysed 'Pooleys Flight Guide' of flying sites to estimate there were 245 operational aerodromes in England, however, if the much higher level of 490 sites suggested by Lord Rotherwick (Hansard, 2001; 27th Feb. Col. 1205) had been used, the response rate would have been halved (although, as will be described later in Chapter Five, even Lord Rotherwick underestimated the number of sites by approximately two thirds). A more crucial point, however, than the question of aerodrome numbers, was the way that the ESRC study had treated all sites equally. Clearly they were not equal, as flying sites varied considerably in usage and significance. It was felt this was even more important to the analysis of the results than establishing the number of aerodromes involved. For instance, it was said that thirty nine authorities engaged in some form of flying regulation, but it did not say if these authorities regulated large aerodromes near urban areas, where there might be some rationale for limiting the externalities of flying activity, or whether they concerned small rural sites where the rationale for regulation may have been different. Although some attempt to class aerodromes by type of runway was presented, they had no other means of classifying sites according to significance, nor did they have any 'insider' knowledge upon which to develop their own categorisation process. For example, aviation enthusiasts would understand that runway type and length had a limited bearing on the 'significance' of a site, as runway characteristics reflected historical accident rather than the level of GA use. It was therefore realised it would be necessary to develop some form of aerodrome classification, in order to improve the analysis of the intended local authority survey, beyond that achieved by the ESRC team. It was felt that by establishing a clearer picture of the number of aerodromes and then categorising them, based on a range of physical attributes as described in Chapter Four, the generalisations suggested by the ESRC report (including the extent of conditions applied, the range of mixed uses to be found at sites and degree that local authorities included GA in their plans) might be better supported.

The next issue which the ESRC report failed to address had originally been one of their declared objectives. It was "*to explore existing data sets in order to construct a picture of the geographical distribution of airfields*" (Gallent *et al, 1999: 7*). Although not provided by the ESRC report, it was felt this aim was achievable using a classification process and GIS software. It would conceivably add to the understanding of strategic-local tensions by, for example, relating distribution to population density and exploring the network interconnectivity between similarly classed sites.

The final issue identified was that the ESRC study did not attempt to cross relate its findings. For example, since the ESRC study was concerned with the full range of activities at flying sites, it had analysed the extent to which local authorities had allowed non-flying, mixed use activities, such as car boot sales, go-kart racing or small industrial units to be included on the sites. This additional economic activity, which might be assumed to supplement the income of flying sites, was felt to be important to an understanding of the relationship between planners and aerodrome operators, yet the ESRC study had made no attempt to relate the level of mixed use activities with, for example, the number of conditions controlling flying. Was it possible that LPAs which supported higher levels of mixed use activities on GA sites were also likely to take a more relaxed attitude towards the externalities of flying, and what would this say about guideline implementation? The lack of analysis between questions asked and data gathered, appeared to be a missed opportunity to explore if there were any correlations and therefore explanations concerning different aspects of planning's treatment towards GA.

In summary, it became clear from the inconsistent nature of existing data sets and the gaps within the ESRC research, that the local authority survey and subsequent field visits would need to be preceded by a more complete secondary data analysis. The approach taken to 'testing out' the ESRC report could be summarised into three elements: establishing a comprehensive understanding of the case study background, which in particular would include a more accurate picture of the number and distribution of aerodromes; relating the significance of individual aerodromes to any findings by categorising sites according to physical attributes; and exploring any correlations between different aspects of planning's treatment towards GA. To enable this 'testing out' it was thought possible existing data sets might be supplemented by other surveys, of pilots, aerodromes and manufacturers/traders, and that existing CAA datasets should be analysed, if possible longitudinally, in order that a more cohesive picture could be constructed of the case study industry. As such, the 'testing out' approach referred to in Chapter One, evolved into a more dispersed activity than originally envisaged; shaping the direction of the research that would to address specific issues concerning the ESRC study.

Assessing economic impacts

During the early stages of the research, and based on the declared research aim, a study of the economic benefits of small aerodromes was considered, particularly the highly localised economic effects upon residents and businesses. However, as described in Chapter One, it was realised this would have required a detailed embedded analysis of a few individual sites, leaving little research time for the intended local authority survey and to consider the

wider spatial impacts of GA, which were felt to be an important, almost distinguishing, feature of the case study. Whilst it became clear that a detailed economic study would not be appropriate, it was decided that a means of assessing 'economic impacts' should remain a focus of the research, as it was veiwed as one way to represent and assess the spatial distribution of GA. Although various measures were considered, including staff employed, the number of aircraft, seat-kilometres, tonnage-kilometres and fuel consumed, eventually a financial approach was chosen, which the following will outline, in the belief it would provide as the most appropriate 'common denominator'. It was thought a financial indicator had the potential to be an broad measure, which would take into account a range of economic factors - the staff levels, number of aircraft, aircraft type/size, fuel consumed, and distance travelled.

Then a second and more substantive reason emerged to reinforce this decision, as preparations for the proposed local planning authority survey evolved. It was realised that an assessment of an aerodrome's economic contribution could be an important element when testing the relationship between inputs and outcomes, as defined by the IOO model previously discussed. As previously shown by Figure (3.5) and Figure (3.6), economic impacts were regarded as a planning outcome, so an assessment of the financial activity associated with aerodromes within a local authority, could help to forming an opinion as to whether strategic guidelines that dealt with economic impacts, were effective or not.

A starting point had been to consider the methodologies used in Economic Impact Statements (EIS), Economic Impact Assessment (EIA) and Strategic Impact Assessment (SEA) and in particular those used for Socio-economic Impact Assessment (SIA), which usually occupied an integral place within such methodologies (Turnbull, 1988: 1-30; Morris *et al*, 2001; Miller, Patassini, 2005: 1-12; Partidario, 2005: 151-162). However, a review of the methods used within SIAs displayed an emphasis on employment impacts, a concentration on projects rather than on-going concerns and a focus on local rather than wider socio-economic impacts (Morris *et al*, 2001: 23-25). Given the research aim and the spatial dimensions of the GA industry it was felt the techniques used to assess wider socio-economic impacts, involving input-output models and those founded on economic base theory, were likely to be more appropriate. As regards input-output models, the government input-output tables were considered but they contained no specific information on GA (ONS, 2006). In the absence of appropriate government tables, Morris *et al* (2001: 36) had noted the construction of bespoke input-output tables was generally financially prohibitive for individual projects. Although Batey *et al* (1992: 184) had modelled a large scale change to an airport using input-output analysis, this too was felt to be beyond the resources of the research, due to its requirements for extensive economic data.

Input-output tables had been used within the United States, by consultants to estimate GA's economic output at a national and state level (AOPA, 2002). For example, the total economic impact of GA in the USA had been valued at $42 billion p.a. in 1993. In addition, the American Aircraft Owners and Pilots Association had developed a guideline approach for assessing individual sites, which involved collating information from local aircraft

operators concerning employees, landing fees, fuel, advertising, capital expenditure etc.. The British Aircraft Owners and Pilots Association had used this approach in an attempt to value GA in the UK (AOPA, 1995), but it had not been considered successful, since collating the data from individuals and companies had proved unreliable and the results were not scalable to the national level. For this research to have adopted the same approach, it would have required either a detailed business survey or an analysis of company reports. But, given the GA industry was known to be complex and diverse, it was felt there were just too many small businesses and no reliable means of establishing a representative sample. Furthermore, it would have been prone to the double counting of expenditures. For example, the revenues from training companies would have included income from the use of fuel, just as fuel would be included in the revenues of aerodrome operators that also operated aircraft and sold fuel.

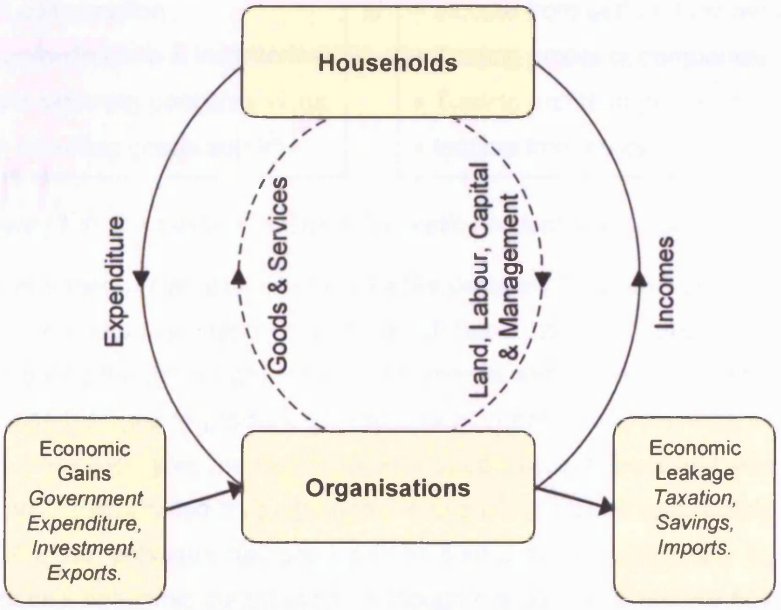


Figure (3.7): Illustration of basic economic theory (based on Stanlake, 1989: 250)

By considering the basic economic theory used by economists (Tribe, 1995: 247; Sloman, 2003: 15) to develop input-output tables, economic base models and calculate national output statistics, a compromise solution was eventually developed, as the following describes. Figure (3.7) shows a simple illustration of economic theory regarding monetary circulation (Stanlake, 1989: 250). The model assumes all households, within a defined geography, purchase goods and services from organisations in that geography, using income earned as wages in return for individual labour and skills. As money circulated around the model it enabled more raw materials and labour to be converted into products and services, such that each recirculation generated added value. With adjustments for this closed loop system, in terms of additional inputs (including government spending, investments and income from exporting goods/services outside of the geography) and economic leakage (including taxation, savings and the cost of imported goods/services), economists have developed the concept of economic multipliers and definitions of economic output. Economic output may be defined in a number of ways (EIU, 2007) but there was now general agreement about the

measure referred to as Gross Domestic Product (GDP). As suggested by Figure (3.7), the output of the economic model equated to the total added value generated by recycling money between households and organisations, plus the difference between the input and leakage adjustments. Since the model was assumed to be in balance, Figure (3.7) also suggested that total expenditure was equal to total income, in which case all three fiscal measures must be equal, i.e. output=expenditure=income. Consequently GDP, as calculated for a nation or an industry, may be defined as either the sum of all value added activity (value of production less cost of inputs) or in terms of total expenditure or total income, as illustrated in by Figure (3.8).

GDP (Expenditure)		GDP (Income)
+ Private consumption		+ Wages & salaries of employees
+ Government consumption	=	+ Income from self-employment
+ Investment (infrastructure & inventories)		+ Trading profits of companies
+ Receipts from exporting goods/services		+ Trading profits of government
- Expenditure importing goods/services		+ Income from rents.

Figure (3.8): Calculation of Gross Domestic Product (based on EIU, 2007)

As mentioned previously, traditional EIAs generally focussed on the employment or 'Income' side of the equation, representing the left hand side of Figure (3.8). Estimates for staff employed during the project and operational phases were normally multiplied by standard estimates of wage incomes to produce an estimate of direct economic impact. This estimate would then be multiplied by economic 'multipliers' to calculate indirect and induced economic effects. However, it was noted that although the use of multipliers was widely accepted and used within EIAs, the technique had proved to be controversial (particularly in relationship to assessing aviation's economic contribution). Although the issue has usually been seen as one of adopting an appropriate ratio (Calgary, 2004: 8; Holvad, Preston, 2005: 18), some have argued its use is based on a "*flawed methodology*" (Whitelegg, 2003: 2, 11).

Apart from possible issues arising from the use of multipliers, estimating GDP based on income did not seem to be easily transferable to the measurement of GA. This may best be illustrated by considering the example of aviation clubs, which typically owned and operated a few light aircraft, compared to business aircraft operators that supplied aircraft and pilots on a contractual basis. Whilst it would have been feasible to access staffing levels for business operators, clubs were non-profit making and generally run by volunteers with no paid employees. Consequently, a 'GDP' calculation based on salaries and profits at a club level would be zero. The only way to capture the income based 'GDP' for club activity, would have been to collate staffing information from each of the organisations supporting the club (in effect treating the club as a 'household' and investigating its multiple suppliers). A consequence of this would be to lose the direct association with a particular aerodrome. However, estimating the expenditure at a club level provided a much simpler solution, since it could be based upon a calculation based on aircraft activity and directly related to the aerodrome in question. This meant that in the case of clubs, the 'GDP' calculation could be achieved from an estimate of

aircraft activity, with no need to extend the investigation to the club's suppliers. Furthermore, by compiling the financial data using easily understood expenditure classifications (fuel, hangarage, maintenance etc.), which could be replicated by others, it was felt the results would be a basis for future research. For example, national GDP could be estimated after adjustments for imports and exports, or the methodology could be used to help develop a full socioeconomic assessment of activity within a region.

In the event, a measurement termed *GA Direct Expenditure* was developed to reflect the consumption elements of the GDP calculation. This differed only from a full GDP calculation in that it did not include allowances for imports and exports, or major capital projects (since it covered operational activity not new aerodrome construction). It appeared to satisfy the need for a common denominator, which would enhance the secondary data analysis and enable an improved understanding of the spatial distribution of GA activity. However, it was not clear if it would provide the reliable economic indicator required to test local authority relationships against central government guidelines. Whilst it was an 'indicator' (Pearce, 2005: 127-150) of economic activity, it was not a full calculation of GDP, or any of the other measures generally used within EIAs. In particular, it was understood that the measure did not equate to a localised net economic impact, as it did not take into account other indirect effects, such as those on house prices or arising from environmental impacts. Equally, it did not attempt to calculate any induced economic activity arise from the use of GA aircraft or aerodromes. It simply accounted for the direct financial consumption associated with aircraft activity, in that it estimated all private expenditure by those using GA aircraft, where each aircraft's location determined the point of assumed consumption, but did not determine where the economic benefits, in terms of employment, income and profit, would be felt. Whilst it was recognised this was less than ideal, in terms of assessing a local authority's input-output-outcome linkages as discussed earlier, it was thought that for the reasons given, concerning the practicalities of evaluating GA economic impacts, it represented a realistic compromise. It was reasoned guidelines drew attention to the possibilities of wider economic impacts, and that the measure of direct expenditure to be used reflected the wider economic situation, so in this sense it would serve to test the relationship, perhaps more stringently than if the economic impacts were obviously evident at a local level.

Understanding research boundaries

The foregoing discussion has examined four factors which shaped the research approach, as a prelude to discussing research objectives in the balance of the chapter. Although the research was proposed on similar lines to the ESRC project, it was additionally influenced by its connection with the industry, several evaluation issues, the original proposal to 'test out' the ESRC study, and the belief that a consumption based approach would be sufficient to help understand the diversity and spatial distribution of GA.

The inherent bias arising from the writer's and sponsors' GA connection was considered and a reflective position taken to minimise effects upon the research. Equally issues of evaluation were discussed and strategies developed based on the recognition of

potential problems. Several issues which were identified from the ESRC study were reviewed and it was explained how the 'testing out' approach evolved to address them whilst also supporting the emerging research question. A discussion of the need to link economic activity with spatial data lead to a transparent method of allocating direct financial consumption to GA activity at an aerodrome level, which could provide a means of assessing the input-output-outcome relationships of local authorities and also be aggregated to a regional and national level. Consequently it may be drawn from this section that, although the research was initially conceived as a simple 'testing out' of the ESRC report, evaluation issues, specific issues with the ESRC report and a means of financially assessing GA's consumption in spatial terms considerably shaped the research objectives and ultimately its design, as may be judged from the next section and Chapter Four.

3.5 Four research objectives

It was said previously, when discussing the ESRC report, that an issue with the earlier research was that it did not analyse its results by class of aerodrome. It was impossible to gauge the significance of their findings, because all sites were treated with equal weight, yet clearly they were not equal as flying sites varied considerably. Despite referring to published 'Flight Guides' and other datasets, previous researchers were limited because no clear method had yet been established to classify flying sites. In priority terms, this observation led to the first objective for this research:

1. *To develop a method for classifying aerodromes according to a range of different attributes.*

It was explained in Chapter One, that the original aim of the research was "*to significantly increase the body of knowledge about GA in the UK [...] with an emphasis on the economic role*", and that it was proposed on similar lines to the ESRC research concerning the reuse of aerodromes. In reviewing the literature about GA and the ESRC research it was suggested, that aside from the issue of aerodrome classification, the background secondary data used by the researchers was limited by a lack of cohesive information describing the industry. It was felt there was a need to obtain a more substantive understanding of GA in order to assess any findings. This observation, arising from the discussion concerning the 'testing out' of the ESRC research, and a commitment to the origins of the research led to a second research objective:

2. *To provide both a substantive background to the planned local planning authority (LPA) survey / field visits and to significantly increase the body of knowledge about GA in the UK, by collating and analysing secondary data to form a cohesive indication of the spatial and fiscal distribution of GA activity.*

Provided these first two objectives were met, it would then be possible to proceed with the LPA survey and field visits. Due to the devolution programme and separation of planning responsibilities, it was decided to focus on English local authorities and aerodromes. The survey and field visits were felt to have two interrelated aspects; to address the issues discussed previously, concerning the 'testing out' approach towards the ESRC study, and to test the hypotheses which had been developed in response to the research question. In terms of the 'testing out', the earlier discussion had identified two elements in addition to that covered by Objectives One and Two. The first was to relate the significance of individual aerodromes to any findings by categorising sites according to physical attributes. The second was to explore any correlations between different aspects of planning's treatment towards GA. Consequently these two activities determined the third objective:

3. *To complete the 'testing out' the findings of the ESRC project regarding GA sites, by conducting a survey of local planning authorities in England, followed by appropriate field visits to both aerodromes and local authorities, with results both cross related and analysed by category of flying site.*

These three objectives paved the way for the fourth, most challenging objective. The fourth objective was seen to be the one that would deliver answers to the refined research question, developed by Chapter One and Chapter Two, and three hypotheses, which were aimed at understanding the role of planning guidelines in relationship to strategic-local tensions. This chapter proposed a possible model for examining local authority effectiveness when implementing strategic guidelines, and then simplified it to highlight the key role played by a local authority's organisational culture, in understanding inputs, perceiving past outcomes and influencing new outputs. The following chapter develops that framework, in the context of the original ESRC questionnaire, and consequently outlines additional questions and changes in format, specifically aimed at testing the three hypotheses. These additional features of the LPA survey therefore provided the basis of what was considered to be the most important objective for the research:

4. *To extend the LPA survey as a means of testing the research hypotheses; by focussing upon the relationships between local planner attitudes, local authority support and the implementation of government guidelines.*

It will be shown in Chapter Four how these four objectives were ultimately developed into an appropriate research plan. Yet, while the plan was being executed, and during the time this thesis document evolved, the process of planning reform and debate about reform continued apace. It was therefore felt appropriate, in the following section, before examining the detail of the research activity, to recognise these changes and to briefly explore the current debate as a backcloth to the conclusions reached at the end of the thesis.

3.6 A changing landscape

Chapter One described some of the events that occurred since the research was initiated and the 2002 Green Paper published. This section will seek to add to that discussion as a background to the following chapters.

It was previously described how the CPRE and other environmental pressure groups, generally accepted the 2004 Planning and Compulsory Purchase Act for England and Wales, particularly since it did not include the Green Paper plans for transferring responsibility for major infrastructure proposals out of the normal planning process. On the other hand, developers felt it would fail to deliver the efficiency, speed and predictability that the Green Paper had promised. Other events had also shaped the direction of planning since the start of the research, including the continued devolution of Scotland, Wales and Northern Ireland, and the decentralisation of England into regions. Allmendinger and Tewdwr-Jones (2006: 16) have commented Labour's devolution project will cause greater differentiation across the UK, and an emphasis on reforms to replace the centralised planning model with a planning model more able to foster regional competitiveness. They have been supportive of the 2004 Act, which has promoted 'spatial planning' as a process that went beyond traditional land use planning, to integrate planning with other policies and programmes that impacted the nature of places (CLG, 2006: 12). Yet, whilst Allmendinger and Tewdwr-Jones (2006: 17) have felt the introduction of spatial planning had "*the potential to develop a more democratic process across the UK, where citizens can interact and help create places they feel are their own*", they also have expressed concerns about ownership, legitimacy and control, as touched on in Chapter One (*ibid*: 12). In a similar vein others have also expressed concerns about the direction of the reforms and the centralising tendency of governments (Healey, 2006: 12; Morphet, 2006: 317; Raco, 2006: 328).

In the meantime, the government has issued a White Paper for planning, which followed a Local Government white paper (CLG, 2007a), the Barker Report (2006) and related reports by Eddington and Stern (CLG, 2007b). In terms of proposals that would affect the strategic-local relationship, the new paper appears to revert back to a key proposal of the 2002 Green Paper, which was not included in the subsequent 2004 Act; to transfer responsibility for the approval of major infrastructure projects from local authorities to a separate government agency. This has been seen (*ibid*) as a move to ensure "*the right decisions are taken at the right level*", which was complemented by plans, "*not to reduce public engagement, but to make it more effective*", that were expected "*to give local authorities more power to take decisions that are best taken at the local level*". Perhaps predictably, the White Paper has engendered very strong opposition from the major environmental groups, who like before, see the reforms as a centralisation of planning and a dilution of local participation (Guardian, 2007b).

At the time of writing, the exact nature of these proposals and full extent of any opposition has yet to be fully absorbed and reflected by academic review. It can be assumed however, that the proposal to separate major projects from more regular development would,

by definition, create a two tier process, each with its own strategic-local relationship. For aviation, the White Paper promises to support the development of the national and regional airports, yet given the GA industry has a limited use of regional airports, it is unlikely to have a significant impact on smaller sites. In the context of this thesis it may be concluded, despite the changing landscape that has occurred, the relevance of understanding strategic-local relationships, as associated with the use of national guidelines and local discretion, has remained not only important to GA but to other industries and individuals affected by this aspect of the current planning process.

3.7 The path ahead

This chapter, set out to lay the research foundations for the rest of the thesis, by establishing several objectives that would support the three hypotheses developed in Chapter Two. Consequently, the chapter explored several ways that planning's effectiveness might be measured and this led to the development of a local authority model, which summarised many of the findings of Chapter Two and this chapter. The chapter then outlined what was known about GA at the beginning of the research and concluded that although there were many secondary data sources covering the technical aspects of GA, there was a conspicuous lack of research into its wider issues, and in particular its relationship with land use planning. Four factors which ultimately shaped the research objectives were then discussed; including the writer's awareness of bias, evaluation issues recognised by others, the approach taken to 'test out' the ESRC research and how GA's consumption might be spatially and financially assessed then related to the effectiveness of guidelines in influencing local authority outputs. This enabled four objectives to be identified, which were intended to address lessons learnt from the ESRC research, and by other researchers, whilst helping to explore the wider issues of strategic-local tensions. The objectives were in short: to classify aerodromes; to provide a cohesive account of the spatial and fiscal distribution of GA activity; to 'test out' the ESRC research; and finally, based on the completion of the first three objectives, to test the three research hypotheses established in Chapter Two.

Following a review of current planning reforms, it was also concluded that although the landscape has changed considerably since the research was first undertaken, the subject of strategic-local relationships, remained important to those affected by this aspect of the planning process, particularly as there was some suggestion in the latest proposals of a continued centralising tendency by the UK government, and fears that public participation in planning issues would become limited by future reforms. Chapter Four will now take the four objectives developed in this chapter and progress towards an appropriate research plan, in line with Figure (1.2), as shown in Chapter One.

CHAPTER FOUR: DESIGNED FOR ACTION

This chapter describes how a research plan was designed and executed to achieve the four objectives established by the preceding chapter. It outlines the methodology used to categorise aerodromes, provide a substantive secondary analysis of GA, then survey local planning authorities and conduct field visits. Finally, it reflects on the realities of achieving response rates, coordinating activities and adapting to unforeseen changes.

4.1 Outline of the research elements

In the preceding chapters a research question evolved into three hypotheses, which were then translated into four research objectives. In summary the objectives were: to categorise aerodromes; to provide a cohesive background account of the spatial and fiscal distribution of GA activity; to 'test out' the ESRC research; and finally, based on the completion of the first three objectives, to test the three research hypotheses. This chapter will outline the methodologies used to advance the objectives, whilst also touching upon the issues and difficulties encountered during the implementation phase.

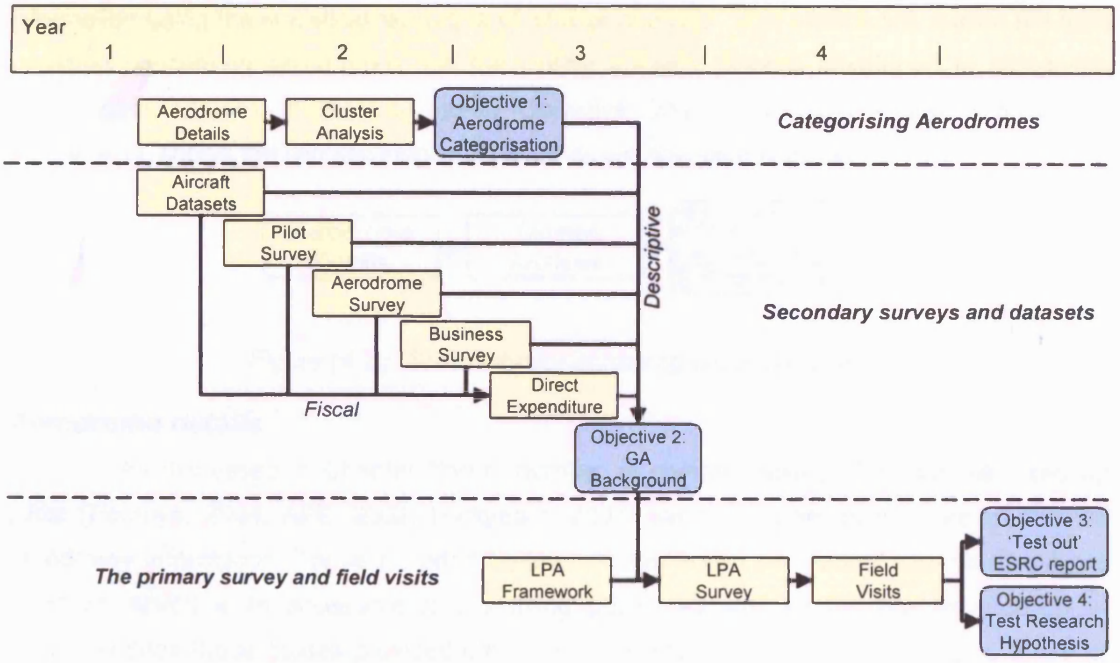


Figure (4.1): Schematic timeline showing main research elements

As has been said, the research began in the autumn of 2001. The operational phase of the research, excluding preliminary reading/planning and thesis preparation, extended from July 2002 to December 2005; approximately three and a half years. Figure (4.1) illustrates schematically the planned elements of the operational phase and how they related to the four objectives. The following sections will describe the three levels indicated by Figure (4.1), the categorisation of aerodromes, secondary surveys and datasets and the primary survey of local planning authorities and subsequent field visits.

4.2 Categorising aerodromes

As was discussed in the previous chapter, the ESRC findings were not presented by aerodrome class, as they had no means of grading flying sites, and since small and large sites were treated equally, it proved difficult to judge the significance of the empirical research findings. Consequently, Objective One was established, to reduce the apparently complex variety of aerodromes into a set of limited types or categories that reflected their relative importance, according to general characteristics.

A starting point was to assume the 'importance' of a site was directly related to levels of activity, where activity was measured in terms of the number of aircraft movements and the type of aircraft involved. However, as mentioned in Chapter Three, there was no central dataset which might have provided activity levels, and hence no direct means to assess individual aerodromes. As there were said to be over 490 sites it would have been impracticable to visit each site to form an on-the-spot assessment. Equally, it was found to be impossible to distinguish between aerodromes using simple parameters; for example, all those with grass runways, glider sites, or those fully CAA licensed. It became clear the only way to classify aerodromes was to use secondary data from a variety of sources, and to process the information using the statistical technique of 'cluster analysis'. This section will outline the data collected concerning aerodromes and the cluster analysis process developed to categorise sites (Lober, 2004b), in order to satisfy Objective One. Figure (4.2), which is based on Figure (4.1), shows the two key stages involved as will now be discussed.

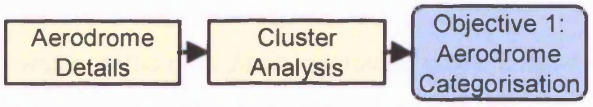


Figure (4.2): Schematic for achieving Objective One.

Aerodrome details

As discussed in Chapter Three, number of comprehensive 'flight guides' used by pilots (Pooleys, 2004; AFE, 2002; Lockyears, 2004) were available as sources of detailed aerodrome information. These provided details of sites from international airports to private air-strips, which were accessible to the flying public. As well as the precise location of individual sites these guides provided other data essential to the aviator wishing to arrive or depart, including circuit procedure, radio contact and runway details. Since they represented possible 'generators', 'attractors' or 'detractors' (Roberts, 1974: 98), it was felt possible such information might be used to indicate a flying site's importance. Insufficient runway length and/or an inadequate surface might, for example, be detractors for large aircraft, whilst the existence of a café could be an attractor for the casual, leisure flyer. As may be seen in Figure (4.3), in addition to numerical and textual information, flight guides contained schematic maps of aerodromes, which might be used to indicate the level of site development. Twenty parameters were developed from the flight guides, then another seven were added from five other sources, and each parameter appropriately coded, as shown by Table (4.1).

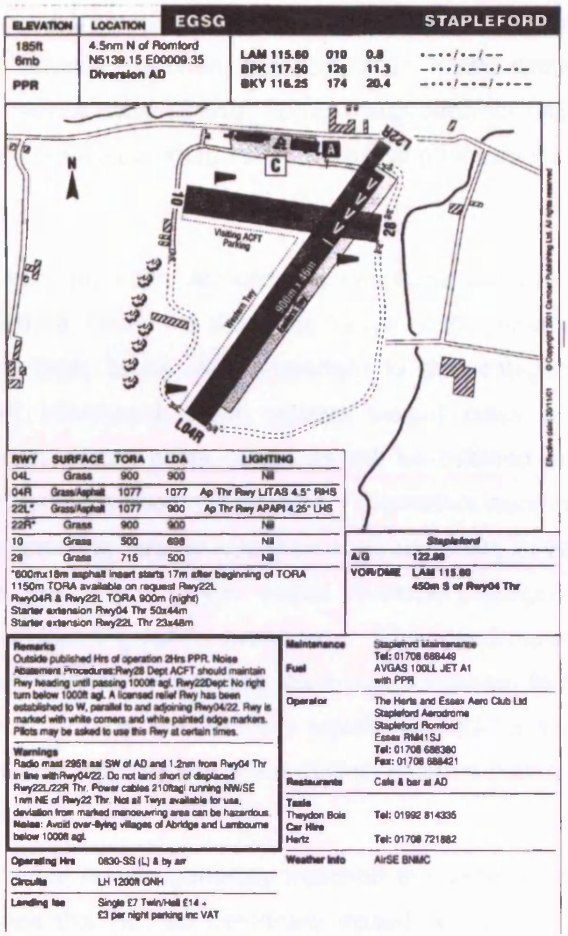


Figure (4.3): An example aerodrome 'plate' contained within a flight guide (AFE, 2002)

Source	Parameter	No. Codes	Weight Class	Range (from / to)
Flight Guides	Extent of Building Developmt.	5	C	None to large terminal facilities.
Flight Guides	Available Runway Directions	3	C	One, Two or >Three.
Flight Guides	Available Helicopter pads	3	D	None, One or >Two.
Flight Guides	Type of Runway Surface	3	C	Grass, Mixed or Hard
Flight Guides	Max. Runway Length (TORA)	7	C	Less than 450M to >2,400M
Flight Guides	Runway Lighting	3	C	None, Partial or Full
Flight Guides	Outline of Taxiway & Apron	3	C	Grass, Part Hard, Both Hard
Flight Guides	Navigational Aids	3	C	None, Basic Beacon, ILS etc.
Flight Guides	Air to Ground Communications.	5	C	None to Full TWR and GND
Flight Guides	Operating Hours	4	C	By Arrangement to Full 24*7
Flight Guides	Ease of Joining	5	D	Simple to Complicated
Flight Guides	Maintenance Facilities	3	C	None, One, >One Company
Flight Guides	Fuel	4	C	None to >One type of fuel
Flight Guides	Catering Facilities	5	C	None to Restaurant
Flight Guides	Customs Facilities	4	D	None to Full Customs
Flight Guides	Landing Charges	4	D	Unspecified to Normal Charges
Flight Guides	Type of AD Operator	3	D	Individual, Club, Company
Flight Guides	Specialisation (Gliders etc)	4	D	None to > 1 main specialisation
Flight Guides	Aircraft Restrictions	4	D	None to >2 restrict. +1 exclus.
Flight Guides	Flight Guide Recognition	3	D	Lockyears only or AFE/Pooleys
Flyer Magazine	Known Training Schools	6	C	None to >Seven Schools
CAA Request	CAA Aerodrome Licensing	2	B	Not Licensed or Licensed
CAA Movements	Level of GA Movements	8	B	5% to 100% assumed
Census Data	Population within 12 miles	6	B	<1/6 max to >5/6 maximum
Census Data	Population within 2 miles	6	C	<1/6 max to >5/6 maximum
Streetmap.co.uk	OS Map Visibility	3	D	None to OS Mapped.
Multimap.co.uk	Visible Aircraft presence	6	A	0 > 50 small or 25 airliners

Table (4.1): The 27 parameters used to categorise aerodromes

These additional parameters included: CAA information regarding movements at key sites and the level of licensing granted; the population levels within 2 and 12 miles, as estimated from 2001 census data (Edina, 2003) using ArcMap GIS software; and visual assessments using maps from Streetmap.co.uk and aerial photographs from Multimap.co.uk.

Cluster analysis

A dataset containing each aerodrome's longitude, latitude and coding for all 27 parameters was established. Given the disparate nature of the parameters, and a belief that some parameters were likely to be more important to any categorisation than others, a weighting process was introduced. The relative weight class of the parameters was established from a survey of GA pilots, which as will be outlined in the following section, included questions concerning aerodrome facilities. Parameters were initially grouped into two weight classes and the resulting dataset was then analysed using SPSS, a statistical analysis software package. The 'hierarchical cluster' option (Average Linkage/ Between Groups) was selected and a set of 'dendrograms' produced. The dendrograms showed pictorially progressive relationships between each case, as it was compared to others, and then either paired off individually or in groups. The software rapidly executed a number of such iterations until all cases were grouped together into a few distinct clusters that in turn resulted in one all embracing cluster.

Although the initial results generally matched the writer's intuitive expectations for the small number of sites that he had personally visited, it was felt essential to conduct a consultation process to increase confidence in the complete output from the cluster analysis. A similar validation methodology had been used when developing urban and rural definitions the UK Government (Bibby, Shepherd, 2004). A presentation was made at the annual general meeting of GAAC and ten volunteers were enlisted to review the statistically derived categorisation output. All volunteers were known to be 'industry experts' with a wide knowledge of different aerodromes, for example, one member said he was familiar with 155 different sites. The categorisation results were circulated using a pro-forma spreadsheet and the responses analysed. Overall the results were encouraging, as only 17 (13%) out of 132 aerodromes known to at least two reviewers, were felt to be 'incorrectly' classified. From this response, the 132 sites were identified as 'benchmark' aerodromes, in that more than two reviewers had agreed to their classification. To improve the error rate it was decided to adjust the sensitivity of the weightings by extending the number of 'weight classes' from two to four. As Table (4.1) indicates this was mainly achieved by reclassifying, and increasing the weight of four key parameters; sites with a CAA license, the level of known movements, the population within a 12 mile radius and finally the number of parked aircraft visible through satellite photography. After several iterations of SPSS, involving minor reassignments of weight class, the programme correctly reclassified the 17 'incorrect' sites. The final weightings given to each of the four weight classes, A, B, C and D, were 4, 2, 1.5 and 1 respectively. The underlying assumption was that by correctly classifying benchmark cases, using a statistically driven process, the balance of sites, which could not be physically validated, would also be

correctly categorised; at least to a level that would have significantly reduced the initial 13% error. Some assurance for this assumption was provided later when twenty six aerodromes were visited during the field study phase, none of which appeared to be incorrectly categorised, and then when the results of the analysis were supplied to, and accepted by, the CAA's General Aviation Strategic Review (GASR) team in 2006 (CAA, 2006d).

The six categories, which were given identifying codes from Category A to Category F, to represent a range of conventional land based aerodromes from 'Regional Airports', through to 'Basic Airstrips'. Appendix A contains the final dendrogram produced and describes more fully the six levels of aerodrome identified.

4.3 Secondary surveys and datasets

As mentioned, Objective Two was formulated to overcome the absence of cohesive secondary data relating to GA activities. The inconsistent nature of existing datasets and gaps within the ESRC research, had suggested the local authority survey and subsequent field visits should to be preceded by a more complete secondary data analysis. A starting point had been to review the CAA aircraft datasets, and then with an understanding of what was possible from official statistics, the intention was to complete the gaps using estimates obtained through surveys. Three groups of stakeholders were identified as possible sources of secondary data through surveys; GA customers (essentially pilots), aerodromes and the businesses that supplied both aerodromes and customers. Since the data gaps appeared to cut across each group, and each would in any case provide a different perspective, it was decided to survey all three.

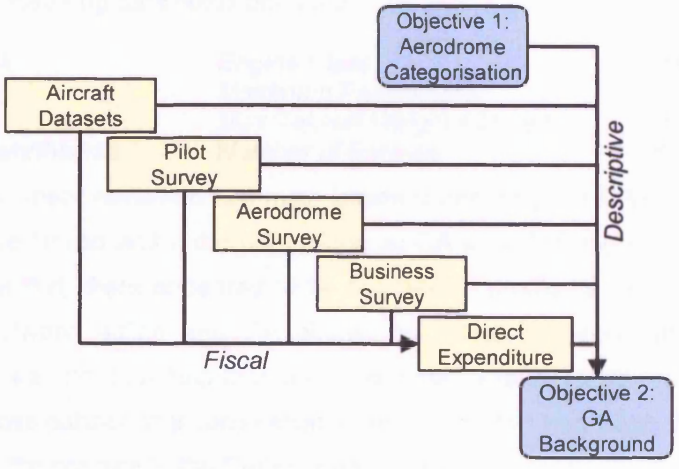


Figure (4.4): Schematic for achieving Objective Two.

As illustrated by Figure (4.4), which sets out the five main activities involved, the output from the aircraft datasets and surveys provided both descriptive and fiscal information, with the latter enabling the estimation of direct consumption in the form of GA's direct expenditure. The intention was to bring together the information from official statistics and the three secondary surveys to produce a consistent descriptive account of GA, supported by the common denominator of direct expenditure. It was felt this would provide the detailed

background required by Objective Two, so 'significantly increasing the body of knowledge about GA in the UK' and forming a cohesive indication of the spatial and fiscal distribution of GA activity. Each of the five main activities depicted in Figure (4.4) will now be outlined.

Aircraft datasets

An obvious source of secondary aircraft data was the CAA, yet its datasets were primarily focused on airlines; for example, detailing civil routes, punctuality, finance and passenger numbers. The statistics relating to GA were far less comprehensive. For example, the CAA recorded the aircraft movements at sixty five UK airports, but as these did not include many of the more notable GA aerodromes, it was not possible to establish a total view of GA movements. The CAA also maintained records of the number of licences issued to pilots, yet the number of active pilots was not known as pilots have multiple licenses. Another dataset was said to show the total number of aircraft on the CAA register (a dataset known as G-INFO), but as will be outlined, the dataset included a significant proportion of aircraft that were not operational, and at the same time it excluded aircraft gliders and foreign registered aircraft. Despite these inconsistencies, G-INFO proved to be the most main data source, mainly because it also provided the opportunity for longitudinal analysis.

A copy of G-INFO was purchased (CAA, 2005a). It detailed thirty different aspects of registration; for example a record of each aircraft's date of first registration, serial number, popular name and the address of the registered owner. However, as it was essentially maintained as a register of ownership, and because aircraft had multiple owners, many aircraft were listed more than once in the dataset, under different owners. These duplicates were isolated, and then following data fields analysed:

Registration Mark	*Engine Class*	*Owned/Chartered*
Aircraft Class	*Maximum Passengers*	*Registered Owner*
Aircraft Type	*Max Takeoff Weight Allowed*	*Trading Name*
Certificate of Airworthiness	*Number of Engines*	*Year of Construction*

However, there remained two main issues concerning the CAA dataset. Its aircraft classifications were limited and it did not include all GA aircraft flying in the UK. Taking the classification issue first, there appeared to be two related problems. Firstly, the register did not distinguish between airline and GA aircraft, let alone between business and private operators. There was no data field that indicated if the registrant was a private individual, a sole trader, business partner or a corporation, even though this had been the practice prior to 1984 and was still the practice in the States (FAA, 2006).

To surmount the issue of ownership, it was decided to identify aircraft according to one of three categories; 'Airline ', 'GA Business' and 'GA Private', using an iterative process. Decision rules were developed to identify these three groups of owners, as shown by Figure (4.5). For example, to identify 'Airline' aircraft, the registered owner field was searched and sorted for all those aircraft belonging to the major airline operators. The types of aircraft use by these operators were then used to identify other potential airline operators, given some airlines lease aircraft from less well known companies. A similar process, using the decision

rules to sort the dataset, enabled all 'GA Private' aircraft and 'GA Business' aircraft to be identified.

Decision Rules	If:	Unless:
Airline	1) Aircraft directly owned by an airline. 2) Aircraft of the same type as owned by the airlines.	a) Aircraft type not an airliner (i.e. balloon, light SEP) a) Owned by a known GA business (BBGA member) b) Only one such aircraft owned (assumed to be a GA business aircraft)
GA Private	1) Aircraft not categorised above. 2) Registered using a private name.	a) More than 5 aircraft registered to any one name (assumed to be a GA business sole trader)
GA Business	1) Aircraft not categorised above.	

Figure (4.5): The decision rules used to categorise aircraft.

CAA Defined Classes	Redefined Classes
Airship (Gas-Filled)	Airship / Balloon
Airship (Hot Air)	Gyroplane
Balloon (Gas/Hot Air)	FW Amphibian / Seaplane
Balloon (Gas-Filled)	FW Self-launching Motor Glider
Balloon (Hot Air)	FWLP Single Engined Piston under 750kg
Balloon (Minimum Lift)	FWLP Single Engined Piston over 750kg
Glider	FWLP Multi Engined Piston under 5700kg
Hang Glider	FWLP Multi Engined Piston over 5700kg
Fixed-Wing Self-Launching Motor Glider	FWLP Turbine Engined under 5700kg
Fixed-Wing Amphibian	FWLP Turbine Engined 5700 - 50000kg
Fixed-Wing Seaplane	FWLP Turbine Engined 50000 -100000kg
Fixed-Wing Landplane	FWLP Turbine Engined over 100000kg
Gyroplane	Microlight single seat
Microlight	Microlight twin seat
Helicopter	Helicopter under 750kg
	Helicopter 750-5700kg
	Helicopter over 5700kg

Table (4.2): CAA Classes of Aircraft vs. redefined classes.

The second classification issue was that aircraft were not distributed into relatively equal groups. For example, although the register identified fifteen classes of aircraft, as listed in Table (4.2), two of the classes were not used (Glider & Hang Glider) and six were used to describe various types of Balloon and Airship, each of which had few cases. This left eight classes to describe all other types, although one class 'Fixed-wing Landplane' (FWLP), described almost all the aircraft on the register, from the smallest of powered aircraft to Boeing 747s. As a consequence, a set of refined classifications was developed, combining the lesser used classes and splitting FWLP, microlights and helicopters into thirteen new classes, mainly based on aircraft weight, as also shown by Table (4.2).

With the issue of classification resolved and applied to a refined dataset, the next issue addressed was the incomplete nature of the G-INFO dataset, which did not include all aircraft based in the UK. There were for four main reasons identified (i.e. excluding timing/registration issues):

- Gliders were not included
- Foreign registered aircraft (FRAs) based in the UK were not included
- Aircraft based overseas but registered in the UK were included
- Aircraft no longer registered but stored/on display in the UK were not included (although they equally required aerodrome facilities such as maintenance and hangarage)

At first the only means identified of overcoming this issue was thought to be through the proposed pilot and business surveys. These could be used to establish appropriate ratios between gliders and powered aircraft and between UK registered aircraft and foreign registered aircraft. Then the writer thought to approach Air-Britain, the principal organisation for aircraft historians (more commonly known as 'aircraft spotters'). They were well known as publishers of a book that listed all aircraft visually identified in the UK. Although no electronic version had ever been produced, it was agreed for the data to be translated, with the result that Air-Britain's UK, Overseas and Glider registers were provided in an electronic format for research purposes. Subsequently the Air-Britain datasets were refined, sorted and then merged with data from G-INFO. A critical advantage of the Air-Britain dataset was that it listed aircraft by location; meaning it was possible to spatially distribute all aircraft across the UK. A comparison between the two datasets revealed the Air-Britain register had a surprisingly high level of coverage. Of the 17,761 aircraft on the CAA register, 17,242 were included on the Air-Britain register, an accuracy of 97%. During the later phase of the field visits, the accuracy of Air-Britain data was also checked by individual aerodrome. It was found that the Air-Britain register generally reflected the total number and type of aircraft to a +/- 10% error, although the accuracy of specific aircraft based at the sites was lower, in the range 70% to 90%.

The reclassification of aircraft by ownership and type, plus the addition of aircraft not covered by the CAA dataset, provided a firm basis for understanding the total GA aircraft population operating in the UK. An added bonus, achieved by the merging of official statistics with the aircraft spotters' database, was that the complete listing of aircraft, by registration number, could be spatially mapped across the country, to provide a unique view of the distribution of GA aircraft.

The national pilot survey

The opportunity was taken early in the research programme to develop and test a basic questionnaire design that could be used across each of the three surveys. The 'piloting' of the questionnaire design involved a small scale postal survey in November 2001 of 110 pilots, all of whom were members of the Cloudbase microlight club at Redhill aerodrome (Lober, 2002). Based on the experience gained from the Redhill test, and knowledge from a review of CAA datasets, a similar questionnaire was then prepared for a national survey of GA pilots, as contained within Appendix D. The objectives of this survey were to:

- Provide a general demographic of GA pilots (age, sex, occupation, location etc.) and a related outline of their aviation based characteristics (aviation qualifications, aircraft

flown, experience, type of flying, expenditure etc.).

- Establish several statistics for the direct expenditure estimate (hours flown per pilot, duration of individual flights, costs per hour, etc.).
- Explore the reasons why pilots learnt to fly and the route taken by professional pilots to gain their qualifications (to answer a question posed by the Department for Transport).
- Determine the factors affecting a pilot's choice of aerodrome, including the distance/time from home and the availability of alternative sites.
- Establish the importance given by pilots to key aerodrome features and the extent to which a lack of these features might impact flying behaviours.[2]

It was tested on GAAC members, then subsequently distribution to approximately 4,000 pilots through AOPA's monthly magazine 'General Aviation'. Shell Oil kindly donated a headphone set for a prize draw, but whilst the response to the questionnaire, at 12%, was considerably better than previously experienced by the magazine's editor, it did not achieve a hoped for 50% rate. It also became clear from the responses that the membership of AOPA was not as representative of the total pilot population as had been expected. In an attempt to correct this situation, the questionnaire was translated into a web-based format and posted on the Internet (www.gaac.co.uk/survey). All the member organisations of GAAC and the main pilot magazines were then encouraged to publicise the survey. In the event, 719 pilots completed the survey. Although remaining a low response, particularly as respondents were not adequately representative of the total pilot population, this survey never the less represented the largest survey of pilot demographics and behaviours ever undertaken in the UK and, as such, yielded much information of value to the organisations that supported its distribution.

The English aerodrome operators' survey

The next survey undertaken was of 301 English aerodrome operators, using a list developed from names and addresses published in the AFE flight guide (AFE, 2002); see Figure (4.3). The questionnaire design and content was tested and reviewed by GAAC members, before being posted in December 2002.

Like the Pilot questionnaire that preceded it, the objective of the Aerodrome Operators' Survey was to gather infrastructure and financial data as well as attitudinal responses to provide the background data required by Objective Two. The data collected included;

- Types of ownership and management (business, non-profit making, etc)
- Level of annual aircraft movements
- Number and type of aircraft based at the aerodrome

[2] *Responses to this enquiry were used to establish the 'weighting classes', as described earlier concerning the aerodrome categorisation process.*

- Financial data (annual turnover, business rates, local expenditure)
- Number of other aviation and non aviation businesses resident on-site
- Level of staff employed, by both the aerodrome and the other businesses
- Perceptions of local authority planning (structure plans, safeguarding and GA benefits)
- Perception of the decline or otherwise in the number of aerodromes

164 completed questionnaires were received, representing a satisfactory response rate of 54%. Subsequent analysis, by type and geographical location, showed respondents were generally representative of English aerodromes.

The national manufacturers' and traders' survey

This was the last quantitative survey to be conducted. The offices of the British Business and General Aviation Association (BBGA, formerly GAMTA) were enlisted to help with the design and distribution of the survey. BBGA was the largest organization representing British manufacturers and traders involved with GA. As with the previous surveys, the questionnaire design was intended to be as simple as possible to answer. It was posted to 154 BBGA members during November 2004. The questionnaire gathered information on;

- Number of aircraft operated by responding company
- Level of total company vs. GA sales turnover
- Import and export estimates
- Staffing levels
- Ratio of company staff employed at non aerodrome vs. aerodrome locations.

To achieve a satisfactory response, several 'follow up' messages were required. The final one was delivered, by the writer, during a presentation given at the BBGA's Annual Conference in April 2005. In the event, 58 companies replied representing an adequate 38% response rate. Information collected was provided to the BBGA organisation in return for their assistance.

Measuring direct expenditure

As previously discussed in Chapter Three, the measurement of *GA Direct Expenditure* was chosen to provide a common denominator of GA's spatial distribution and to enable the direct consumption of GA within a local authority to be assessed, then compared to the way planners interpreted national guidelines. The approach taken was to disaggregate private consumption, as one element of the GDP calculation, for both services and goods, using identified expenditures and revenues. This was achieved by a detailed analysis of GA's direct spending, split primarily by operating, financing, depreciation, trip related and aircraft sales expenditure costs. It estimated all private expenditure by those using GA aircraft, where each aircraft's location determined the point of assumed consumption, but did not determine

where the economic benefits, in terms of employment, income and profit, would be felt. As such, it reflected the writer's industrial background by employing standard product cost techniques (Batty, 1970: 569-639). Accordingly costs were related to aircraft 'hours flown' and 'movement' data. Hours flown was defined as the estimated annual airframe hours recorded for each aircraft. An aircraft 'movement' was assumed to be the act of taking-off or landing (including 'touch-and-go's' used in circuit training).

The annual direct expenditure for each aircraft was defined by the formula:

$$ADE_{kq} = (AAH_{kq} \times SVC_q) + (ENM_{kq} \times SSC_q) + SFC_q$$

where:

ADE_{kq} = *Estimated Annual Direct Expenditure for aircraft k, a class q aircraft*
AAH_{kq} = *Average Annual Hours flown by aircraft k, a class q aircraft*
SVC_q = *Standard Variable Cost per hour (fuel, maintenance etc.) for a class q aircraft*
ENM_{kq} = *Estimated Number of Movements per annum for aircraft k, a class q aircraft*
SSC_q = *Standard Semi-variable Cost per movement (landing fees etc.) for a class q aircraft*
SFC_q = *Standard Fixed Cost per Annum (insurance, hangarage, fees, etc) for a class q aircraft*

To achieve this calculation required four datasets to be developed; a total listing of all aircraft by type and class, an estimate of each aircraft's annual hours flown, aircraft movements by class and estimates of their associated costs, again by class. The total listing of aircraft was established from CAA and Air-Britain datasets as previously outlined, leaving the three other data sets, as described below.

In terms of 'hours flown', a review of the G-INFO dataset suggested it might be possible to calculate the annual number of hours flown per aircraft listed, directly from a comparison between two consecutive annual datasets. An appropriate request was made to the CAA and they kindly provided a dataset of hours flown for the period 1984 to 2005. However, due to the assumptions used by the CAA to calculate hours flown, the dataset was actually only reliable for the period 1984 – 2001, leaving a gap between 2001 and 2005 (the then current year). Consequently, it was decided to analyse the period 1984 – 2001, and then to project any trends forward to 2005. As will be discussed in Chapter Five, an unexpected and rewarding consequence of this analysis was the discovery of a significant underlying social trend, which was potentially significant to planning's understanding of GA activity. Using the merged data developed from the two CAA datasets and Air-Britain, the next task was to estimate the number of aircraft movements, the second of the three outstanding datasets. Originally the intention had been to use data from the pilot survey, but as mentioned, the response rate was low and had not yielded representative samples for the full range of aircraft. An alternative approach was taken, whereby a request was made during the field visits, to sample air traffic control records. As a result a dataset of 24,400 movements was acquired, which provided the average flight duration times needed for the main types of aircraft. Movements were then calculated using the simple formula:

$$\textit{Annual Number of Movements} = \frac{\textit{Number of hours flown p.a.} \times 2}{\textit{Average flight duration}}$$

The third dataset required to calculate direct expenditure concerned variable, semi-variable and fixed costs by aircraft type. As with movements, the original intention had been to use the pilot survey to collect the data, however, due to the low response rate it was again necessary to seek alternative sources. The prime method of data collection was via a questionnaire, which was distributed to aerodrome operators and aircraft owners during the field visit phase of the project. Respondents were asked to provide details of their expenditure. The questionnaire, in the form of a spreadsheet (see Appendix D), listed the main elements of aircraft cost, from capital cost to financing and operational costs through to hire rates. Gaps in the responses were completed by direct contact with operators of larger business aircraft, insurance companies, the CAA personnel division, chief flying instructors and appropriate aviation web sites. Where data remained unavailable, estimates were based on appropriate averages. Given the nature of the data collection process, in some cases from a relatively small number of cases and individuals, it was recognised the final estimate, like the aerodrome categorisation, needed to be validated by 'industry experts'. Consequently, details of the estimate were submitted to members of the CAA's General Aviation Strategic Review (GASR) team for review. The team accepted the analysis as a reasonable estimate of GA's direct expenditure. A fuller explanation of the calculations involved, including estimates of total capital worth, is contained within Appendix B.

4.4 The primary survey and field visits

Previously, Figure (4.1) showed the purpose of the local planning authority survey and subsequent field visits was to achieve Objectives Three and Four, as set out in Chapter Three. Figure (4.6), which is based on Figure (41.), highlights how the achievement of Objectives One and Two were necessary precursors to the LPA survey and field visits. It also shows how the simplified LPA framework, developed in Chapter Three, was needed to design the LPA questionnaire. The LPA survey and field visits then enabled the 'testing out' the ESRC study and the three research hypotheses, which were established in Chapter Two.

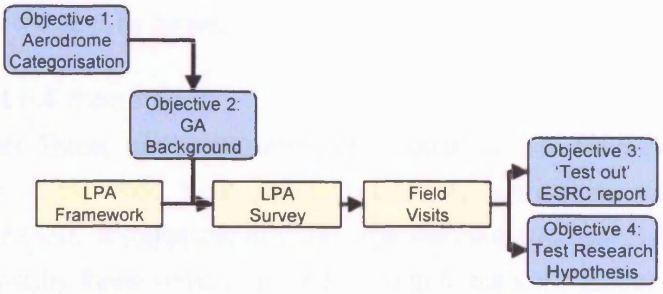


Figure (4.6): Schematic for achieving Objectives Three and Four.

The preceding sections have described the methods proposed to categorise aerodromes, then survey pilots, aerodromes and manufacturers, plus develop a common denominator in the form of direct expenditure, each of which were seen to be important to preparing a local planning authority survey. In the following the original ESRC questionnaire

will be briefly described, then expanded to match the simplified LPA model presented in Chapter Three, before discussing the methodological approach adopted for the field visits.

The ESRC questionnaire

Since the research was conceived as a 'testing out' of the ESRC's funded research into 'Alternative Land Uses on Small Rural Airfields' (Gallent et al, 1999), a starting point was to base the new survey on the original ESRC questionnaire, except that it was to relate only to active sites and not disused ones. The original questionnaire contained the following sections, which reflected a mixture of factual and attitudinal inquires;

- Airfields in the district: used/disused, name, if details held.
- Regulation of flying activity: overall policy, if conditions used, means used, particular details, if DoE Circular 2/92 ('safeguarding') applied.
- Other activities/land-uses on the district's airfields: by airfield, if non-flying activities (motor sports, retail parks etc.) to be found.
- Regulation of other activities/land-uses on district's airfields: permanent new development (any presumption, favoured type, criteria), periodic activities (if shows/festivals held and if any difficulties experienced).
- Impacts – real and perceived: local resident views (regarding flying, new development), five example 'policy' statements (agree/disagree), non-flying activities (suitability rating 1 to 5).

Only one of these sections, relating to 'other activities/land-uses' enabled responses to be related to specific aerodromes. For example, it asked what type of planning conditions were applied (aircraft engine size, number of takeoffs/landings etc.), if sites were 'safeguarded' and if there were specific references to sites in the district plan. Yet, it did not link this information by site. The section that did relate responses to specific sites, however, required respondents to cross reference answers between different pages. It served to highlight a limitation of paper-based questionnaires concerning multiple cross references. As a consequence it was decided to use a web based design for the new survey. Using the internet allowed respondents to enter each site's name only once, as subsequent questions automatically listed the sites by name.

Translating the LPA framework

In Chapter Three, after considering the theoretical and practical issues faced by other researchers, a simplified local planning authority framework was presented, and illustrated by Figure (3.6). It suggested how the organisational culture of a LPA was related to the planning context by three vertical 'indirect' linkages: planners' understanding of inputs; planners' perceptions of the build environment; and finally how the planning culture might influence outputs. In turn these linkages were related to the three hypotheses, which operated horizontally in a direct sequence of inputs, outputs and outcomes. By viewing the framework in vertical, horizontal, direct and indirect terms it was hoped it might enable a closer insight of the issues experienced by others when evaluating planning effectiveness.

However despite the simplification, the framework still needed to be translated to accommodate a practical and measurable set of attributes, which could be used to test the

relationships between guidelines, the built environment and planning's influence and decisions. It was recognised that the original ESRC questionnaire contained elements that might be used to develop such measurable attributes. Firstly, it collated information on factors which described the direct 'output' of planning, in terms of the use of conditions, the inclusion of GA in local plans, the level of aerodrome safeguarding, and the extent that mixed uses were tolerated alongside flying activities. Secondly, it had asked essentially attitudinal questions about the 'real and perceived' impacts of GA, which were taken to reflect the shared, common beliefs held by planners that indirectly shaped planning outputs.

Based on the simplified LPA framework, it was thought these two core datasets, direct and indirect, were potentially linked. Other relationships expressed by the LPA framework were therefore examined, with a view to modifying the LPA survey and developing measures to test them. Earlier decisions to develop an aerodrome categorisation process and to calculate GA Direct Expenditure, as previously described, ultimately enabled indicators of planning 'outcome' to be developed, in terms of the type and level of GA activity in a district. Three measures were identified to reflect the level of GA infrastructure in an LPA. The direct expenditure calculations enabled all aircraft expenditures to be estimated within a district, creating an output indicator termed *Direct expenditure on GA*, whilst the categorisation process enabled two other measures to be developed. As covered will be described in Chapter Six, these measures were termed *Weighted number of aerodromes* and *Highest category of aerodrome in the district*.

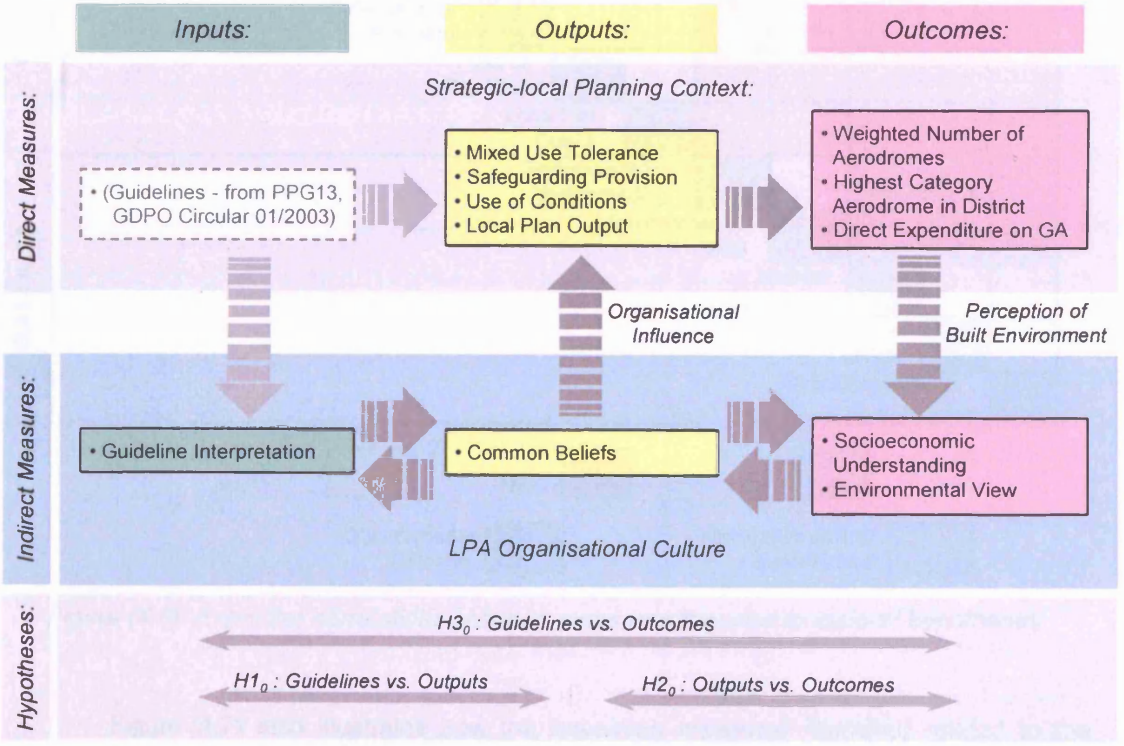


Figure (4.7): Measurable attributes within a simplified LPA framework

Pursuing this approach, it was decided to extend the proposed LPA questionnaire by strengthening the 'Common Beliefs' section and adding two other sections. One section was

to test planners' perceptions of the socioeconomic value and environmental impacts of GA, and the other to probe planners' interpretation of national guidelines. The latter section was required because, as was outlined in Chapter Three, only PPG13 and GDPO Circular 01/2003 contained any specific references to general aviation. This meant it was not possible to devise a direct means of measuring the input side of the framework. Had the study involved questioning LPAs about a wide range of guidelines, each aimed at diverse issues, it might have arrived at another solution. Each guideline might be assessed by respondents at a national government level, in terms of its importance, clarity and expected outcomes and then these responses compared to actual outcomes. Yet, despite the narrower focus of this study, it was thought conceivable that an indirect measure of 'guidelines' could be achieved by capturing the way planners' interpreted the specific GA guidelines, as shown by Figure (4.7).

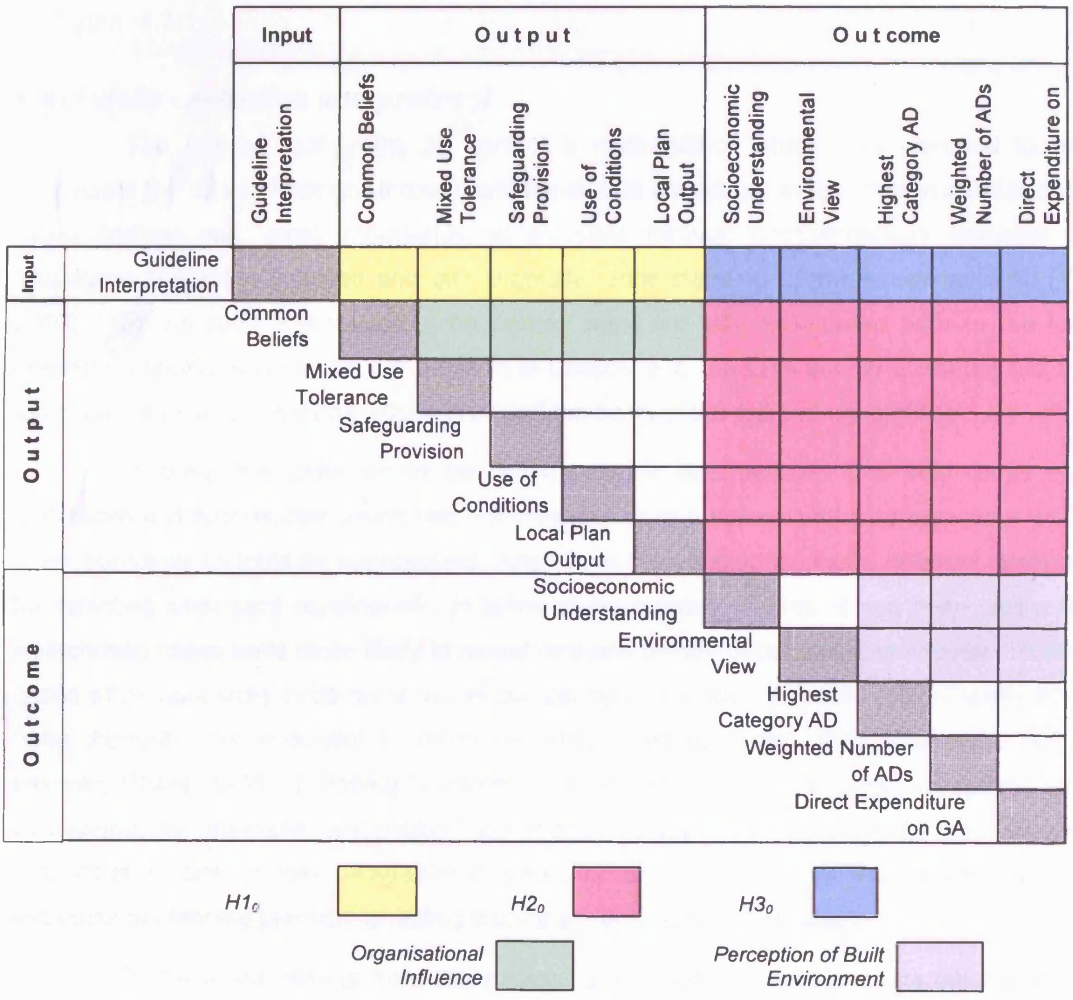


Figure (4.8): Expected correlations between measures required to support hypotheses

Figure (4.7) also illustrates how the remaining measures identified related to the simplified LPA framework. Seven direct and four indirect measures were devised, which will be more completely described in Chapter Six, and described in Appendix C. Although it was recognised the use of a postal questionnaire limited the research to a partial view of any LPA's organisational impact, it was felt that a focus on the cultural dimension of decision making, by

separating the planning process from the LPA's culture, would provide some additional insights of the gaps noted by others. Subdividing the traditional input-output-outcome model into vertical as well as horizontal linkages, would require some, if not all, of the linkages shown in Figure (4.7) to be evident, at least partially, if the three hypotheses were to be supported.

Figure (4.8) identifies the correlations that were expected to support the null hypotheses; both in terms of the 'horizontal' linkages required to test the hypotheses and the two 'vertical' links suggested by Figure (4.7) Other correlations might exist, for example, between the three factors describing the level of GA activity within a district, or between the use of condition and the level of mixed use allowed, but to propose that guidelines were an effective means of achieving desired outcomes, it would be necessary to find significant correlations between the measures that appeared to be related in the framework, as depicted by Figure (4.7).

Field visits - selection and protocol

The role of field visits, as part of a multi-method study was intended to help triangulate the survey findings (through additional data collected), to illustrate in greater depth those findings and, most importantly, to elucidate through complementary enquires the underlying processes involved and gain a greater understanding of the issues involved (Yin, 2003; 150). As such, the issues to be probed were not fully anticipated prior to the local planning authority survey. As will be seen in Chapter Six, the LPA survey ultimately led to a set of concerns and questions, which provided the basis of the case study protocol.

In order the visits would be constructive, it was decided that only those local authorities and aerodromes which had both responded to a survey and said they were willing to be interviewed should be approached. Apart from this condition, several different strategies for selecting sites were considered. In terms of the number of sites, it has been said a few well-chosen cases were more likely to reveal rare and unique circumstances whereas multiple cases were more likely to be regarded as compelling and robust (Yin, 2003; 45). Equally it had been thought more important to maximise what could be learnt, than attempt to defend typicality (Stake, 1995; 4). Hoping to maximise the learning opportunities, various options were considered; for example, undertaking an in-depth study of all aerodromes and planning authorities in one or two geographical areas, or only visiting sites that represented the extremes of planning practice, enabling a compare and contrast approach.

In the event, results from the surveys and secondary data analysis influenced the site selection, when it suggested aircraft movements between aerodromes deserved greater exploration. It was felt the connectivity between nodes in the network might be critical to the debate between local impacts and strategic interests. It seemed possible that the nature of movements between aerodromes, and the dependence of aerodromes upon a network of similar sites, was a strategic issue that needed to be better understood. Consequently, it was decided to reflect this increased interest in the network's connectivity by adopting an adaptive approach to the choice of sites. A 'snowball' sampling approach (May, 2001; 95) was devised,

since this suited the widely distributed nature of aerodromes. The plan was to visit five local authorities and fifteen aerodromes, based on their mutual connectivity and interdependence. A local category 'B' site, Fairoaks, was chosen as the first site to be visited in order to test the interview format and data collection approach. Following an interview with the aerodrome manager, Air Traffic Control (ATC) records were examined, and twelve aerodromes most closely associated with Fairoaks identified, either because Fairoaks aircraft visited them or their aircraft visited Fairoaks. From this list, the next group of aerodromes was selected. When these sites were ultimately visited the process was repeated and another group of aerodromes self-selected themselves. This ensured subsequent aerodromes, and authorities, were selected over a dispersed geographical area.

The five local authorities were chosen if it was felt they might contribute to the research by virtue of their relationship with the aerodromes visited. The local authority visits were seen as 'purposive' samples (De Vaus, 2004; 90). Figure (4.9) illustrates the first stage of the progression, based on the visit to Fairoaks, in Surrey. It lists the top dozen sites connected with the site visited, the site category and highlighting (in bold type) those willing to be interviewed and subsequently visited. Because of the unpredictable nature of the 'snowball' approach, the logistics involved and some difficulty in selecting appropriate local authorities, the final number of aerodromes actually visited was twenty six.

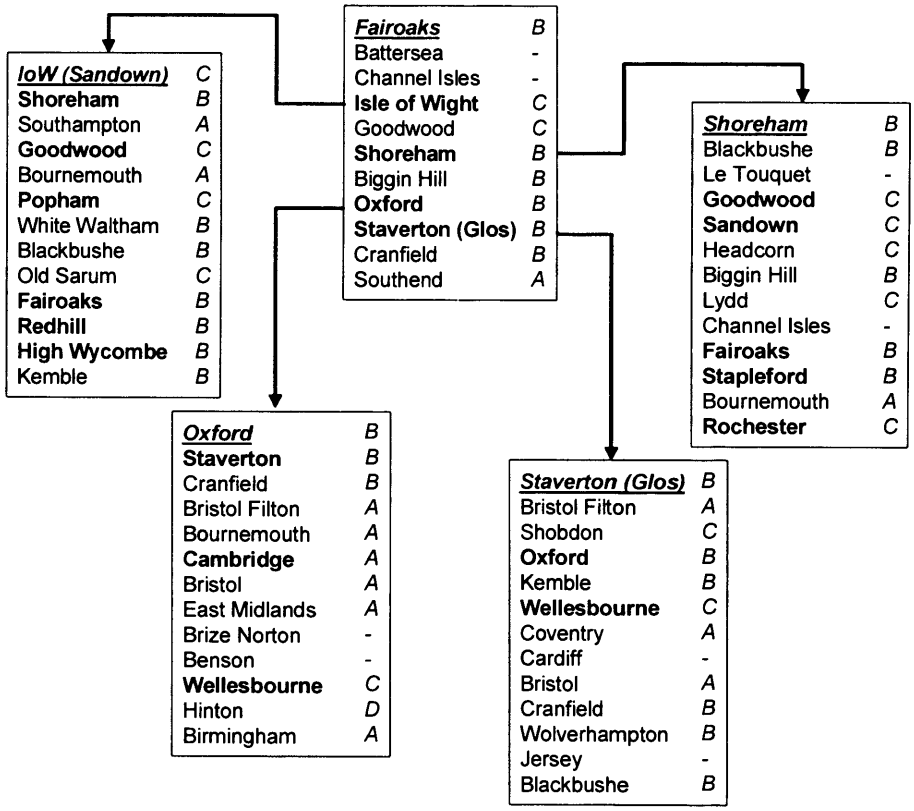


Figure (4.9): Illustration of sequential flow of case study selection sites

A case study protocol was developed (Appendix D). Prior to each visit a briefing note was sent, outlining questions and explaining the purpose of the visit was to collect data, and to gather experiences and views about the relationships between site operators, the local

planning function and other local stakeholders. It was explained financial data would be treated as confidential (although in practice participants were reluctant to divulge detailed reports). When finally conducted, the interviews were qualitative, semi-structured in nature. Although meetings were preceded by formal arrangements and an indication of the questions to be asked, the conversations were flexible and allowed to diverge in order to follow an interviewee's point of view, into areas not previously considered (Bryman, 2001; 313, May, 2001; 123, Stake, 1995; 65). To ensure conversations, and other non-financial data gathered, could be used to illustrate specific points, interviewees were sent a formal record of the meeting after the interview, and asked to approve its contents. The content of these reports, as summarised in Appendix E, will be used later in this thesis.

4.5 From theory to reality

The purpose of this chapter was to outline the methodologies used to advance the objectives set in Chapter Three, whilst also relating how the approach worked in practice. The chapter followed the outline provided by Figure (4.1), which indicated how the plan was designed to achieve the four objectives; categorising aerodromes, providing a substantive case study background, testing out both the 'ESRC' survey and the research hypotheses.

In reality the path shown by Figure (4.1) was not as smooth as the schematic drawing might have suggested. The categorisation process and secondary surveys of pilots and aerodromes were completed before the LPA survey as planned. However as mentioned, the pilot survey did not achieve the targeted response and consequently other means were sought to establish reliable expenditure data, principally through personal contact during field visits. Indeed, gathering data for the direct expenditure estimate proved to be more difficult than expected. There also were issues concerning the timing of the business survey, although the delay was not critical to the LPA survey and it was completed before the field visits. Equally, the analysis of aircraft data proved to be more complicated than expected, delaying its completion to after the LPA survey but before the field visits. The problem in achieving the schedule depicted by Figure (4.1) lay in setting an over optimistic timetable and then maintaining it in the face of unforeseen delays. On the other hand, opportunities to introduce novel and unique approaches were taken. Two of the surveys used web based technology, an 'official' CAA dataset was combined with 'unofficial' Air-Britain records and the categorisation process was refined using 'benchmarks' agreed by industry 'experts'. The merging of datasets and use of 'industry experts', served to illustrate the advantage gained by the writer's 'insider' knowledge and contacts.

The following three chapters will now detail the results obtained, starting with a description of the GA industry, its people and activities.

CHAPTER FIVE: THE CASE STUDY SETTING

The chapter provides a substantial setting to the local planning authority survey and field visits which will be covered in subsequent chapters, whilst also raising its own issues for discussion. It uniquely describes general aviation in terms of its pilots, aircraft, aerodromes, trends and value, by bringing together the results of three background surveys and extensive secondary data analysis, to provide a comprehensive statement of general aviation in the UK.

5.1 A focus upon particularities

This chapter addresses Objective One and Objective Two, as developed in Chapter Three. It summarises the findings from a range of secondary sources to provide a necessary perspective for the following chapters, which will then cover the results of the local planning authority survey and the outcomes of the subsequent field visits, in order to illuminate the way planning and GA relate in the strategic-local context.

Strategic-local tensions were evident, from Chapter Three, when it was said for more than a decade GA supporters had felt 'under threat' (AOPA, 1992: 7). The House of Lords debate in 2001 articulated this feeling, claiming GA was under pressure through the imposition of planning conditions and the anti-general aviation stance taken by some local authorities (Hansard, 2001: 27th Feb. Col. 1214). On the economic front there was concern that the escalating costs of operating light aircraft were placing flying beyond the reach of younger generations, and that the infrastructure was in decline and at risk through the continued closure of small sites, which were not considered important to the national economy. Chapter One described how these sentiments had been independently confirmed by the ESRC research, which found problems facing airfields, in terms of satisfactory planning practice, were both significant and generally neglected (Gallent *et al*, 1999: 19). It was said planners often saw little economic benefit from GA to local communities and that they paid more attention to noise and safety complaints (*ibid*: 227). However, there seemed to be an acceptance that flying was a legitimate activity, worth of at least some protection, and little evidence of planners seeking to close sites (*ibid*: 254).

More recently the GA industry lobbied the CAA to conduct a strategic review of the issues facing the industry, as it felt beset by changes in European legislation, CAA charging fees and the continuation of pressures previously aired in the House of Lords. The review was carried out between autumn 2005 and June 2006 by a joint CAA/industry/Government team, chaired by Alex Plant, who was the Head of Economic Policy and International Aviation in the CAA's Economic Regulation Group (CAA, 2006d). Illustrative of evidence presented at the time, Chart (5.1) was submitted by Dr. Ian Harnett (2005b), an economist and private pilot, to back concerns felt by GA supporters. Based on CAA data, Chart (5.1) highlighted an apparent 28% fall in the GA movements, at ten of the largest GA aerodromes over the period 1997 to 2004. Other evidence suggested traditional light aircraft had grown slowly, compared to cheaper types and the airlines, and that there had been a 40% decline in the issuances of

private pilot licences since the early 1990s. The submission by Ian Harnett concluded "*GA has entered a spiral dive*", a comment that encapsulated the feelings of the GA industry at the time and which provides an additional issue for this chapter to consider later.

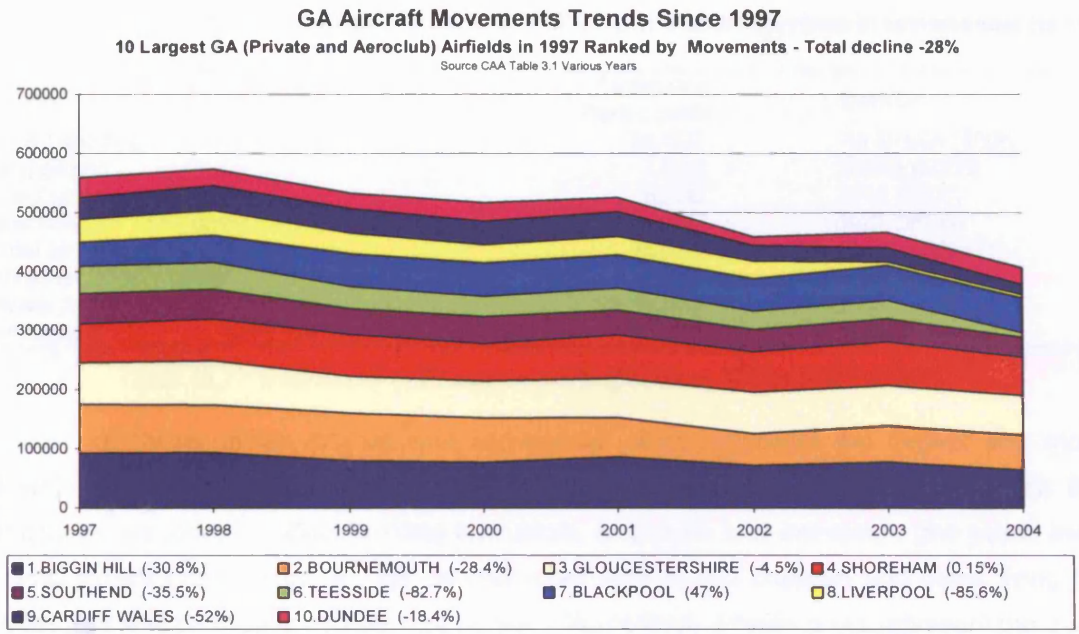


Chart (5.1): Movements at twelve major GA aerodromes (Harnett, 2005b)

The following will attempt to understand the trends depicted by Chart (5.1), to assess whether or not they involved the planning process and if they were genuinely significant to the GA industry. It will begin with the broad statistics of aircraft, pilots, activity and aerodromes, based on the analysis of secondary datasets. Subsequent sections will focus upon the spatial aspects of the aerodrome network and then turn to the employment estimate and financially based results of the research.

5.2 GA demographics

In this section, the results of the secondary analysis of flight guides, CAA and Air-Britain datasets will be outlined to provide a view of the people using GA aerodromes, the aircraft population, historical levels of activity and the number / type of aerodromes involved. As Figure (4.1) illustrated in Chapter Four, the following mainly flowed from the early stages of the research, in particular the initial interrogation of secondary datasets in relationship to Objective One, the categorisation of aerodromes. Yet, as will become evident, the interrelated nature of the data inevitabley draws upon later findings, including those revealed during field visits.

People using GA facilities

If GA's significance were based, in the absence of any economic information, on its public profile or the number of people directly involved in its activity, its value might reasonably be considered low. For whilst GA supporters have argued it supplies a wide range of urgently needed goods, enabled key emergency services, carried 3.5 million passengers using GA's

public transport aircraft (BBGA, 2005: 7), organised air shows enjoyed by 6.6 million spectators in 2002 (ADEA, 2006) and typically attracted 460,000 visitors each year to its museums like Duxford (ALVA, 2006), the number of people directly involved in GA was found to be much smaller. Table (5.1) summarised the 2006 membership of key associations representing most of the activities connected to GA, from aircraft spotters to commercial pilots.

Activity	Estimated Participation	Source
Aircraft spotting	20,000	Air-Britain (2006)
Hang gliding	7,000	BHPA (2006)
Parachuting – Activists	5,000	BPA (2006)
Parachuting – Temporary members	21,000	BPA (2006)
Model aircraft	36,000	BMFA (2006)
Sailplanes/gliders pilots	10,000	BGA (2006)
Private pilots	30-32,000	Baxter (2006a)
Commercial pilots (not all fly GA aircraft)	17,000	Baxter (2006a)

Table (5.1): Estimated enthusiasts' participation in GA related activities

Of these, glider, private and commercial pilots represent the largest and most influential set of people involved with GA. This group includes those working within the industry as executive jet pilots, training instructors, engineers and examiners (the actual level of employment provided by GA will be discussed later in this chapter) and those flying for private reasons, principally as a leisure pursuit. Numerically private pilots represent the main customer group, by virtue of owning and hiring aircraft and learning to fly. Since it had been suggested this group was in decline, with younger people unable to afford flying (Hansard, 2001: 27th Feb. Col. 1214), it was felt an appropriate starting point would be to better understand the trends and demographics of pilots. Chart (5.2) shows the estimate that was established for the number of pilots in the UK, following discussions with the CAA (the dotted trends indicate that unfortunately no record was available for three years after 2000, due to a systems upgrade). It suggests the level of active pilots has not changed since 2000, yet in the preceding five years the number of pilots had increased by an average annual growth (AAG) rate of 3%.

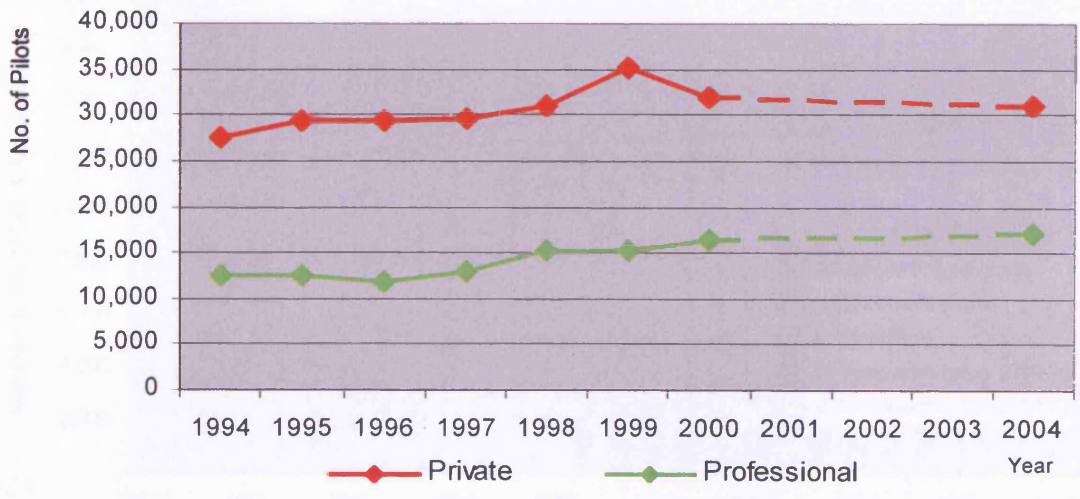


Chart (5.2): Active pilot levels based on medical renewals (CAA, 2006b, Baxter, 2006b)

This information contrasted with the argument presented by Harnett (2005b), mentioned previously, which had been based on the number of private licences issued and showed a 40% decline since the early 1990s. Chart (5.2) was deduced from the renewal of medical certificates, which has been said to be a more reliable indicator of active pilot levels than the number of licences being issued (Baxter, 2006a), since it represented the resultant of new entrants verses those retiring from active flying participation. CAA data also suggested the average age of private pilots was 44.5 years old, similar to professional pilots at 42.7 years. 6% of private pilots and 3.5% of commercially licensed pilots were female and approximately 10% of pilots held helicopter ratings. In addition to these statistics the *National Pilot* survey (Lober, 2004a) found many private pilots first qualified in middle age, with an average qualification age of 36.3 years. A significant proportion, approximately 25%, learnt to fly after the age of 50. The survey also estimated the average flying experience of private pilots to be 14.7 years.

A conclusion drawn from the foregoing was that, although it has been said to benefit a wider population, GA is evidently dependent upon a much smaller group of employees and long term enthusiasts to use and maintain its general structure. Evidence presented by Dr. Harnett suggesting a sharp decline in the number of new pilots, was not supported by a review of medical certification. There appeared to have been a plateau in the number of active pilots, which perhaps reflected changes in recruitment and retirement, a point that it was felt might to be further explored by the industry.

The UK aircraft population

In terms of aircraft numbers, the CAA maintains various sets of statistical information in the public domain, including an analysis of '*Registered Aircraft as at 1st January each year*' (CAA, 2005b). This dataset tracks the growth in UK aircraft registrations since 1984, the year the CAA's electronic database was established.

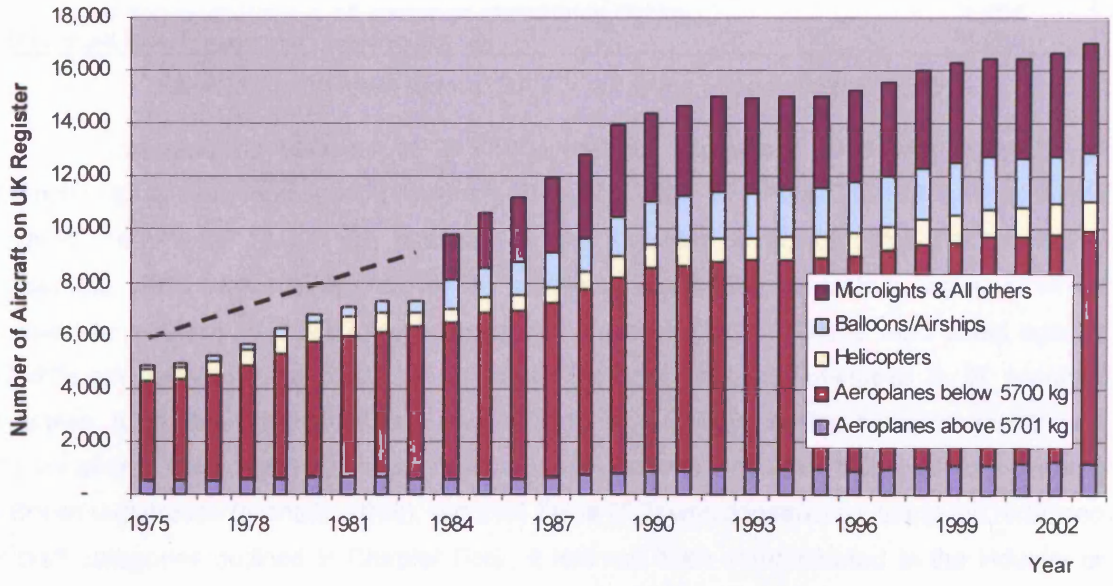


Chart (5.3): Total UK aircraft registrations 1975 to 2003 (as of 31st December)

As no electronic datasets existed prior to 1984, a request was made to the CAA Aircraft Registration section for earlier statistics and consequently data for the period 1975 to 1984 were provided (CAA, 2005c). There were technical differences between the two data sets, the most significant being the addition of microlights (a special class of aircraft under 450kg) in 1984. Yet despite these difficulties, by combining the manual and electronic datasets, it was possible to create Chart (5.3), which for the first time illustrated the long term trends of UK Aircraft Registrations, almost reaching back to the CAA's inception in 1972 (Lober, 2005b).

Chart (5.3) suggested the total number of CAA registered aircraft in 1975 had been approximately 6,000 (i.e. allowing for microlights and the changes to other categories). By the end of 2003 the total number had increased to 17,012 aircraft, representing just under a 4% AAG rate. It was also clear the mix between different forms of aircraft had changed dramatically over the period, due to stronger growth in the lighter forms of aircraft (microlights, balloons and light helicopters) compared to traditional and heavier aircraft. In 2003 just under 1,000 were identified as commercial air transport (CAT) aircraft, meaning that over 16,000 were general aviation aircraft. This public domain information did not, however, provide a total view of aircraft in the UK, for the reasons given in the previous chapter, including the absence of gliders and foreign registered aircraft (FRAs). Consequently, as also described in Chapter Four, the CAA G-INFO dataset was merged with the Air-Britain register (Wormersley, 2005), and a new dataset created that overcame these shortcomings and provided a unique account of UK aircraft in 2005. Table (5.2) summaries the broad mathematics involved.

	Aircraft
Aircraft on the CAA register (Sept. 2005)	**17,761**
less aircraft based overseas	- 663
less identified CAT aircraft	- 916
Total GA aircraft on the CAA register, based in the UK	16,182
plus foreign registered aircraft based in the UK	1,092
plus gliders based in the UK	2,918
plus non registered aircraft, assumed stored or on display	1,267
Estimated total GA aircraft based in the UK	**21,459**

Table (5.2): Estimate of total GA aircraft in the UK as of Sept. 2005

The resulting estimate of 21,459 aircraft in September 2005 was noted to be distinctly higher from those used previously (Hansard, 2001; 27th Feb. Col. 1205), when it was claimed there were 10,000 GA aircraft. It also provided levels of detail not previously presented. This was mainly due to the additional use of the Air-Britain registers, which enabled an analysis of 1,092 foreign registrations aircraft (FRAs). These were listed against 42 different countries and offset by 663 British aircraft operating overseas in 37 assorted countries. It had been alleged British owners were increasingly seeking overseas registration of their aircraft (particularly American registration) in order to avoid the high costs of operating a British registration (Nicholls, 2005), but until Table (5.3) was constructed, using the redefined aircraft categories outlined in Chapter Four, it had not been demonstrated to the industry or government that the migration to other registers was focused upon the more complex aircraft

types. Whilst the total numbers, at 7% of the CAA register, were relatively small, as will be seen later in this chapter the expenditure associated with FRAs was found to be significant; so perhaps justifying the effort required to account for them.

Redefined aircraft category	No. aircraft	% 'G' registered aircraft (CAA)
Airship/Balloon	1	-
Gyroplane	1	-
Microlight single seat	1	-
Microlight twin seat	1	-
FW Amphibian/Seaplane	5	25%
FW Self-launching Motor Glider	2	1%
FWLP Single Engined Piston under 750kg	120	4%
FWLP Single Engined Piston over 750kg	368	7%
FWLP Multi Engined Piston under 5700kg	207	34%
FWLP Multi Engined Piston over 5700kg	21	131%
FWLP Turbine Engined under 5700kg	114	72%
FWLP Turbine Engined 5700-50000kg	111	55%
FWLP Turbine Engined 50000-100000kg	25	227%
Helicopter under 750kg	26	9%
Helicopter 750-5700kg	89	10%
Total foreign registered GA aircraft based in the UK	**1,092**	**7%**

Table (5.3): Foreign registered aircraft by GASAR category vs. the 'G' Register

Although the estimate of the number of aircraft in the UK was established by combining 2005 CAA and Air-Britain datasets, Air-Britain was not able to provide electronic datasets for earlier years. As a result, longitudinal analysis of aircraft data in this chapter reflects only the CAA dataset (G-INFO) and therefore does not include all UK based aircraft. Even so, it was possible to conclude, based on CAA and Air-Britain datasets, the number of aircraft has grown at about 4% AAG during the past three decades to a total exceeding 21,000 aircraft. Within this growth it was apparent there have been significant shifts in the type of aircraft flown, with movements towards lighter, lower cost types and the foreign registration of aircraft, particularly for the more complex types.

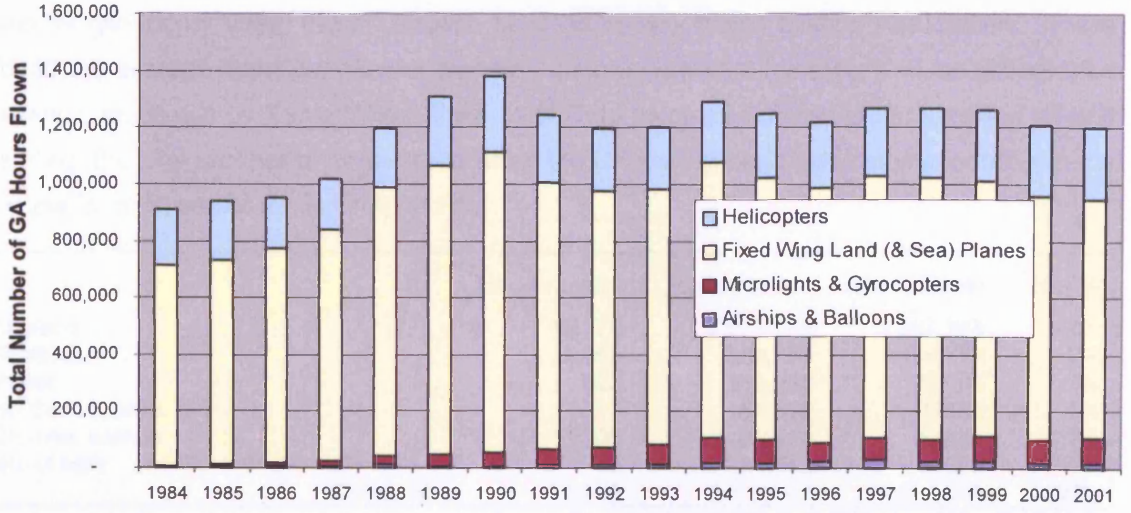


Chart (5.4): GA hours flown per annum by major class, registered aircraft, 1984 – 2001.

Taking off, flying and landing

Having established the total population of aircraft the next stage was to estimate activity levels, in terms of hours flown and movements. As described in Chapter Four, a dataset was provided (CAA, 2005d) which contained the estimated number of hours flown for each aircraft on the CAA register. This was used to construct Chart (5.4), which shows the total annual hours flown over the period 1984 to 2001. It was clear from Chart (5.4) that the growth in aircraft numbers evident in Chart (5.3) was not reflected by a corresponding growth of flying hours. The late 1980s had witnessed a rapid growth in GA hours but the trend has since been level, to approximately 1.2 million hours per annum. However, given the calculation did not include FRAs or gliders, it was not possible to say if the plateauing of hours by CAA registered aircraft necessarily meant total GA activity had similarly plateaued.

	Sample Movements	Average Flight Duration (mins.)
Microlight / Gyroplane	4,331	49.3
FWLP Single Engined Piston under 750kg	2,862	36.2
FWLP Single Engined Piston over 750kg	11,424	42.7
FWLP Multi Engined Piston under 5700kg	622	38.9
Helicopter under 750kg	2,644	45.3
Helicopter 750 - 5700kg	2,397	36.4
Average	**24,392**	**42.6**
Glider (based on BGA annual report)	606,474	26.4

Table (5.4): Estimate of GA aircraft, annual movements and hours flown for the UK (2005)

Based on the aircraft dataset for 2005, the next stage was to apply standard rates to the non-CAA registered aircraft to estimate the total number of hours flown by powered aircraft and gliders within the UK. The estimate was for 1.5 million hours in 2005. This was 25% more than for just CAA registered aircraft, a figure that highlighted the relative importance of the FRA aircraft. Equipped with an estimate for hours flown, it was then possible to calculate the number of movements made by all GA aircraft. As described in Chapter Four, this was achieved for powered aircraft by analysing a dataset of over 24,000 aerodrome movements, and for gliders, by using the information supplied by the British Gliding Association. It was found the average flight duration for powered aircraft was 42.6 minutes, and for gliders 26.4 minutes, as shown by Table (5.4). Since each flight involved two movements, taking off and landing, the total number of movements within the UK having been calculated according to the simple formula, as set out in Chapter Four.

	No. Aircraft	Movements	Hours flown	Hrs %
England	19,170	3,977,725	1,297,763	86%
Scotland	1,063	382,437	124,773	8%
Wales	623	118,017	38,504	3%
Northern Ireland	310	51,652	16,852	1%
Channel Islands	208	90,818	29,630	2%
Isle of Man	85	21,518	7,020	0%
Total UK	**21,459**	**4,642,167**	**1,514,542**	**100%**

Table (5.5): Estimate of GA aircraft, annual movements and hours flown for the UK (2005)

Table (5.5) summarises the data for the UK, in terms of aircraft, hours flown and movements whilst Table (5.6) analyses the dataset by individual aircraft class (refined from the

CAA classification as described in Chapter Four). As may be seen, the English regions contributed 86% of GA activity in the UK and single engined piston aircraft over 750kg represented a third of activity when viewed by aircraft class. Gliders and medium sized helicopters shared the second position at 13% each. It was noted that since the CAA monitored approximately 1.2 million GA movements at 65 sites throughout the UK in 2005, it implied they monitored only 25% of all possible GA movements.

Redefined Aircraft Class	No. Aircraft	Movements	Hours flown	Hrs %
Airship/balloon	1,779	36,217	12,858	1%
Glider	2,920	606,474	133,259	13%
Gyroplane	275	4,185	1,486	0%
Microlight single seat	517	8,587	3,529	0%
Microlight twin seat	3,570	215,653	88,627	5%
FW amphibian/seaplane	28	1,232	437	0%
FW self-launching motor glider	273	59,241	21,033	1%
FWLP single engined piston under 750kg	3,107	336,926	101,567	7%
FWLP single engined piston over 750kg	5,537	1,554,292	552,564	33%
FWLP multi engined piston under 5700kg	953	368,098	119,195	8%
FWLP multi engined piston over 5700kg	73	16,855	5,984	0%
FWLP turbine engined under 5700kg	315	181,170	64,322	4%
FWLP turbine engined 5700 - 50000kg	395	303,592	107,787	7%
FWLP turbine engined 50000 - 100000kg	72	59,287	21,049	1%
Helicopter under 750kg	319	145,866	55,255	3%
Helicopter 750 - 5700kg	1,055	589,902	178,747	13%
Helicopter over 5700kg	63	154,589	46,842	3%
Miscellaneous	208	-	-	-
Total	**21,459**	**4,642,167**	**1,514,542**	**100%**

Table (5.6): Estimate of GA aircraft, movements and hours flown by aircraft type in the UK

By analysing and combining the CAA, Air-Britain and aerodrome datasets it had proved possible to estimate, uniquely as far as it was known, the three key statistics that described GA activity in the UK. They demonstrated that most of the activity occurred in England, a third was generated by medium sized traditional aircraft and the average flight lasted less than 45 minutes. Whilst this gave a broad indication of the nature of activity, distributed across the UK regions and types of aircraft, it also pointed towards an apparent, and possibly significant anomaly, where the level of hours flown had not risen at the same rate as the number of registered aircraft. This latter point that will be returned to later in this chapter, but since its discussion requires a fuller understanding of other aspects of GA, these will be outlined first, commencing with the following which reviews the results of the aerodrome categorisation process, relative to the above movement statistics.

The aerodrome population

Objective One required GA aerodromes to be categorised. In all, 483 fixed-wing, 160 helicopter and 43 military formal flying sites were identified in the English regions, using the three flight guides AFE, Pooleys and Lockyears as mentioned in Chapter Four. Following a statistical analysis, using the software package SPSS, and subjecting the results to a verification panel, as also described in Chapter Four, the aerodrome categorisation process split the 483 sites into six categories; labelled from A to F. Category A was found to describe

21 sites recognised to be *Regional Airports*, due to their emphasis on CAT and business aviation activity. In contrast the 17 Category B sites were unlikely to have scheduled CAT activity, yet were seen to be *Major GA Aerodromes*, since they hosted significant numbers of business aviation and private, expensive light aircraft and helicopters. The term *Developed GA Aerodromes* was felt to be an appropriate way to describe 52 Category C sites, as they were similar to Category B but had little business aviation activity. The 44 Category D sites were felt to be *Basic GA Aerodromes* as their level of infrastructure and development was less than Category C. In a similar way, 140 Category E and 209 Category F sites were referred to as *Developed Airstrips* and *Basic Airstrips* respectively, in order to describe sites with a simple grass runway used by a few light aircraft or microlights.

In addition to 160 helicopter and 48 military sites, included in flight guides but not incorporated in the categorisation process, a subsequent analysis of the LPA survey results (Lober, 2004c) as will be discussed in Chapter Six, further estimated there could be more than 400 other 'unpublished' sites. These were sites not published in the flight guides, yet were sufficiently active to be noticeable to planners. Mathematically the addition of these sites brought the total estimate for formal flying sites in England to 1,123, as shown by Table (5.7).

Aerodrome Classification	Description	No. Sites in England	Average Movements	Total Movements	% Movements
Category A	Regional Airports	21	28,931	607,561	15%
Category B	Major GA	17	66,428	1,129,274	28%
Category C	Developed GA	52	24,925	1,296,100	33%
Category D	Basic GA	44	6,437	283,225	7%
Category E	Developed Airstrip	140	3,120	436,800	11%
Category F	Basic Airstrip	209	265	55,331	1%
	Helicopter sites	160	265	42,359	1%
	Military airfields	48	265	12,708	0%
	Unpublished sites	432	265	114,368	3%
		1,123		**3,977,725**	**100%**

Table (5.7): Number of flying sites and movements in England.

Based on an analysis of aircraft movements (Lober, 2006a), which reconciled hours flown with estimated movement levels by aerodrome, it was calculated that aerodromes listed by the three flight guides accounted for 97% of all movements and that unpublished sites were, on average, no more active than the average Category 'F' site. The exact number of unpublished sites was therefore seen to be relatively insignificant to the overall picture, particularly in comparison with the 134 Category A to D aerodromes, which contributed 83% of all movements and so represented the core of GA activity.

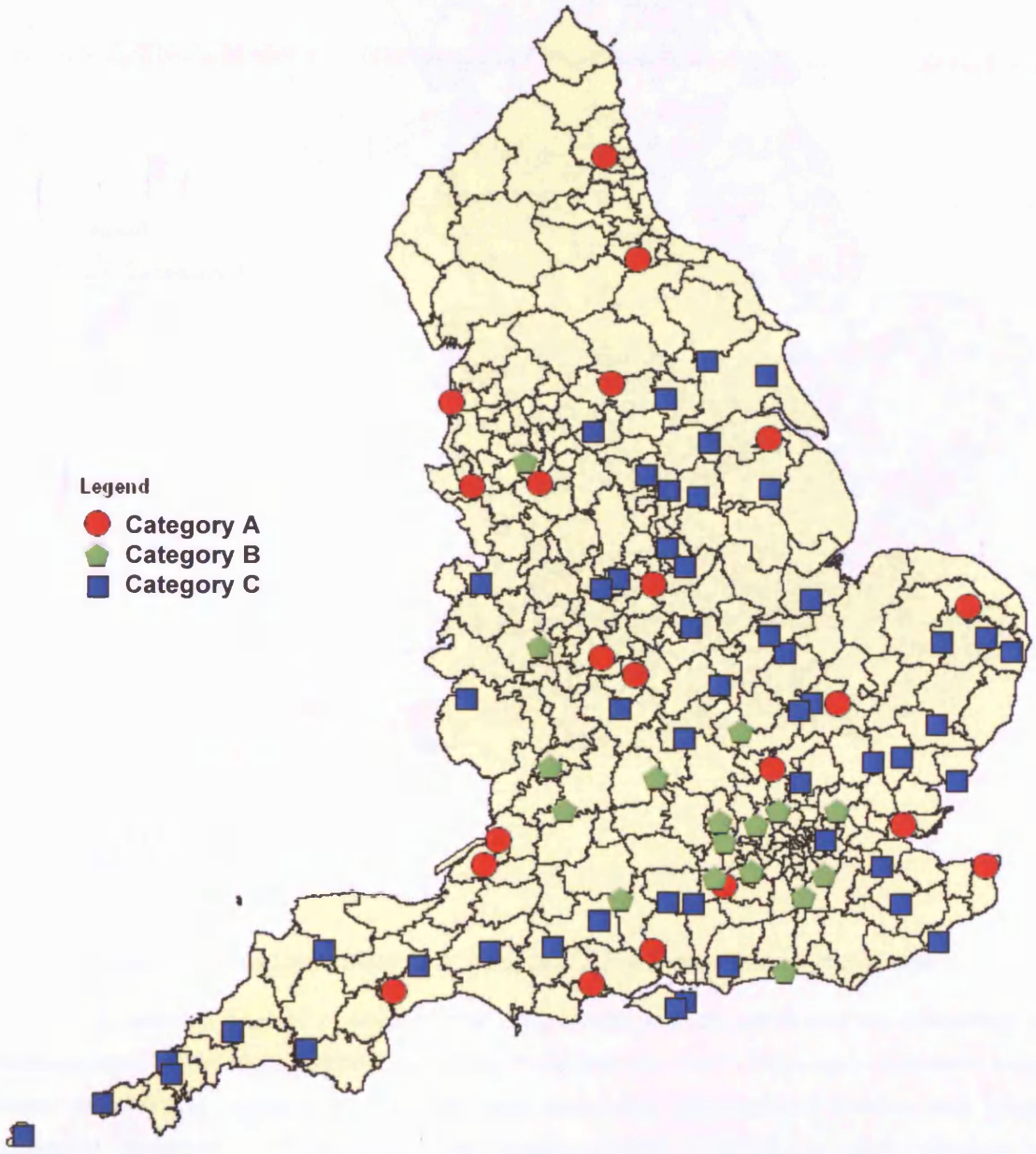
5.3 A spatial dimension

Whilst some GA aerodromes may be well known, like Duxford or Biggin Hill, the field visits were later to confirm that most sites were only known locally. In general it seemed only the regional airports operating scheduled services, such as Bristol, Southampton and Blackpool were known to the general public, even though other sites like Lasham occupied a similar acreage. As discussed in Chapter Three, Evans (1991: 862) argued, relative to new house building, that the public's perception of land-use was a function of what people saw when they travelled around. Given the disperse nature of the GA network, where many sites

are remote located, away from the public gaze, this section will attempt to add to any understanding of GA's aerodrome infrastructure, by showing their geographical distribution and how the sites are connected to one another in a loosely bound network.

The English network

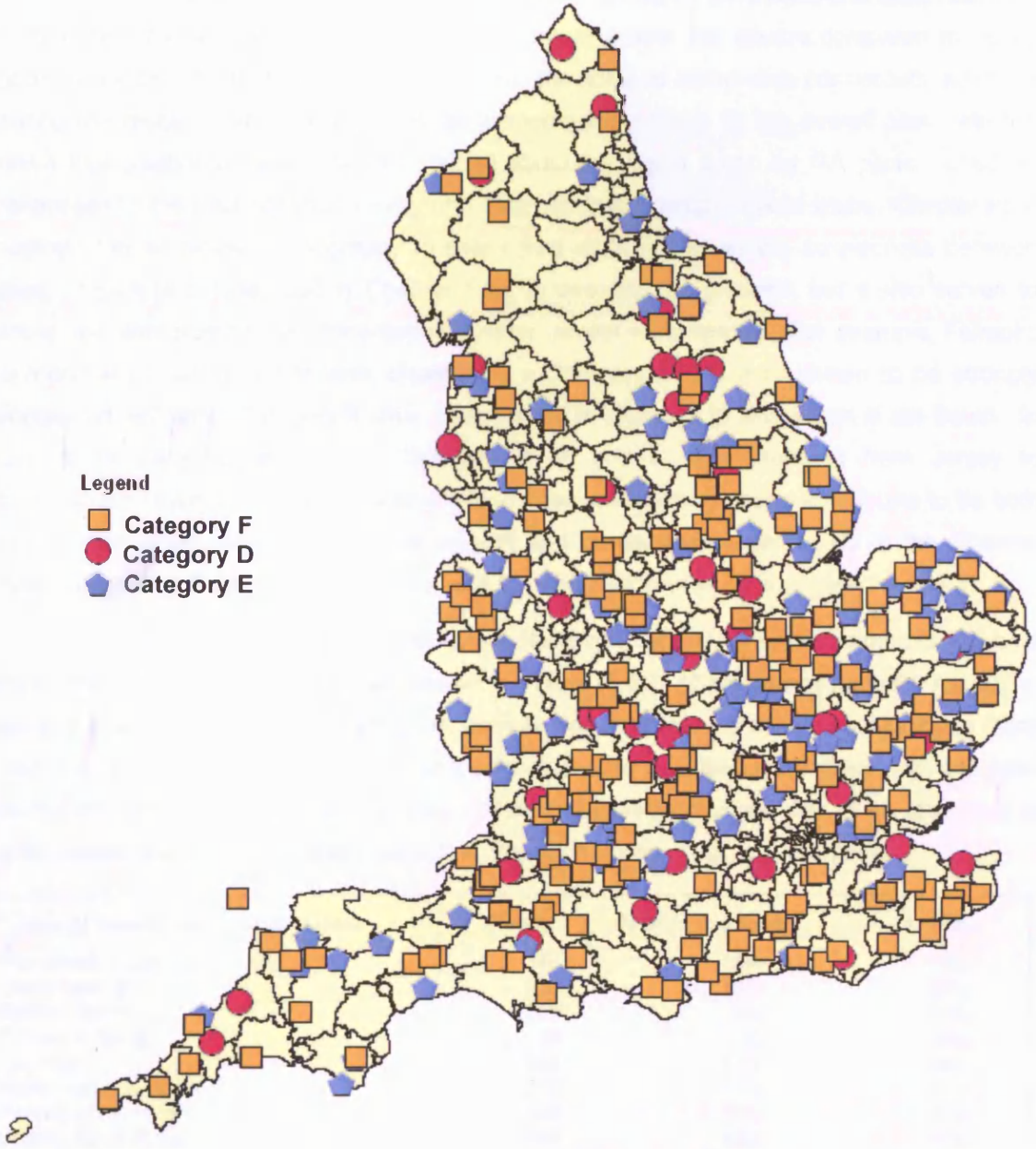
The coordinates of the 483 published aerodromes in England were used to provide, a unique spatial picture of the GA network, based on categorised aerodromes. Map (5.1) and Map (5.2) show the spatial distribution of Category A, B & C aerodromes and Category D, E & and F aerodromes respectively. Map (5.1) was felt to indicate the uniform distribution of category A, *Regional Airports*, across England, supporting a wide range of major urban areas.



Map (5.1): Spatial distribution of category A, B & C aerodromes in England.

Equally Category C, *Developed GA Aerodromes*, appeared to be uniformly distributed throughout the country, apart from perhaps the North and from London to Bristol,

but this left, in contrast, the spread of Category B, *Major GA Aerodromes*, which appeared to be restricted to a central swath between London and Manchester, across the highly populated backbone of the UK. When cross referenced to Table (5.7) it showed that that Map (5.1) covered 90 sites, which contributed 77% of aircraft movements.



Map (5.2): Spatial distribution of category D, E & F aerodromes in England.

In contrast, Map (5.2) covered many more sites, with the result that the distribution of sites appeared to be more uniform. Only the North and the South West were noticed to have fewer aerodromes, perhaps in line with less favourable geographical terrains and lower population densities. On the other hand, despite greater uniformity, a cross reference to Table (5.7) suggested that even with its coverage of 393 aerodromes, Map (5.2) contributed only 23% of aircraft activity. It was concluded that whilst a high level view of aerodrome

distribution pointed towards some differences in coverage, without an understanding of the connectivity between sites it was difficult to say if they were significant differences.

Aerodrome interconnectivity

Unlike scheduled commercial airline flights, GA flights were assumed to be relatively randomised, perhaps echoing the driving patterns of private car drivers compared to heavy goods vehicles. As mentioned in Chapter Four, the issue of aerodrome connectivity surfaced during the research and consequently adjustments were made to the overall plan, with the result that additional insights were obtained about the flights taken by GA pilots, based on responses to the National Pilot survey and data obtained during the field visits. Chapter Four outlined the 'snowball' methodology to select field visits based on the connections between sites. Figure (4.6) was used in Chapter Four to describe the process, but it also served to show how aerodromes are connected with other, similar aerodromes. For example, Fairoaks aerodrome in Surrey, which was classed as a Category B site was shown to be strongly connected with other Category B sites, from Oxford in the north to Shoreham in the South. In turn these were connected with Category A, B and C sites, ranging from Jersey to Birmingham. Fairoaks, as a site with a strong business aviation usage was found to be both closely connected with the Battersea heliport and the business community in the Channel Isles, suggesting it played a distinct role as a transport node used by business travellers.

In terms of private leisure pilots, the National Pilot survey asked respondents about their type of flying. The results are shown by Table (5.8). Although not mutually exclusive, since a *day trip* might involve *visiting UK aerodromes*, and *training others* could include *flying near the base aerodrome*, it was found the most popular activities were *flying near the base aerodrome* and *visiting UK aerodromes*. More structured activities, felt to be important to enthusiasts, like *Air Racing*, *Aerobatics* and *Precision Flying*, were less common.

Types of leisure flying undertaken	Count	% of responses	% of cases
Flying near base aerodrome	549	16%	79%
Learn new skills	320	10%	46%
Rallies, fly-ins	288	9%	42%
Precision flying	39	1%	6%
Day trips	584	17%	84%
More than one-day trips	375	11%	54%
Visiting UK aerodromes	549	16%	79%
Visiting non-UK aerodromes	395	12%	57%
Aerobatics formation	105	3%	15%
Training others	77	2%	11%
Air racing	19	1%	3%
Other	39	1%	6%
Total responses	**3,339**	**100%**	**478%**

Table (5.8): Types of leisure flying undertaken by pilots

Data gathered during the field visits supported this finding. An analysis of Air Traffic Control (ATC) records showed half of private flights undertaken were simply 'A to A' flights (meaning flights which did not involve landing at another aerodrome). As well as identifying the most frequently listed aerodromes, needed for the 'snowball' method of site selection, where possible a secondary analysis of ATC movement records was conducted. Data was

collected electronically from the aerodromes at Blackpool, Oxford, Staverton and Sywell whilst it was manually extracted from Barton, Compton Abbas, Dunkeswell, Popham, Sandown, Sherburn, Shoreham and Wellesbourne. Table (5.9) summarises the findings. It suggested that generally 50% of the movements recorded were for 'A to B' flights (meaning flights that did land at another aerodrome). The inference being the other 50% of flights either involved circuit training or local excursions that did not land away at another site. It was also found that the average aerodrome was typically connected to over 160 different aerodromes in the course of a month (over a longer period, this figure would have been greater).

Site Visited		% Of 'A To B' Flights Vs. Total Movements	No. Sites Connected	Site Most Connected With Field visit Site	% 'A To B' Flights Due To Top 12 Sites
Blackpool	A	67%	148	Isle of Man	52%
Compton Abbas	C	n/a	167	Bournemouth	48%
Dunkeswell	C	n/a	87	Bristol	30%
Fairoaks	B	68%	228	Battersea	42%
Staverton	B	23%	332	Bristol	55%
Barton	B	24%	118	Blackpool	28%
Sywell	C	74%	137	Wellesbourne	47%
Oxford	B	58%	146	Staverton	54%
Popham	C	n/a	144	White Waltham	43%
Sandown	C	n/a	171	Shoreham	58%
Sherburn	C	50%	147	Humberside	40%
Shoreham	B	40%	212	Blackbushe	47%
Wellesbourne	C	44%	106	Kemble	45%
Average		**50%**	**165**		**45%**

Table (5.9): Secondary data illustrating the nature of flights taken

Although on average Table (5.9) shows 50% of the flights involved landing away, this statistic varied significantly between sites. Those sites, which had a high element of pilot training activity and included circuit training in their movement record, inherently had a lower percentage of land-away flights. The other cause of lower levels of land-away flights was found to be the proximity and suitability of neighbouring aerodromes, as will be discussed more completely in Chapter Seven, using the examples of Staverton (Gloucester) and Barton (Manchester).

Most sites were found to be connected with aerodromes outside of the UK, in Ireland and mainland Europe, and for some aerodromes like Shoreham and Sandown (Isle of Wight), proximity was also clearly a factor in the level of overseas flights. A study of 2,539 flights by pilots responding to the National Pilot survey suggested that 16% of flights were overseas. Of these flights, a quarter involved staying at least one night, with an average of 2.4 nights, and a third were work, rather than leisure, related. Although this sample was known to be unrepresentative of all pilots, it served to show that apart from connectivity within the UK, aerodromes played a role in connecting Britain with other countries.

A conclusion drawn from this section, which looked at the geographical distribution of aerodromes, relative to their category, and the profile of flights taken between them, was that the data supported a view that the spatial arrangement of sites may be an important factor in the viability of individual sites and of the network as a whole. From a planning perspective, it confirmed that aerodromes were interconnected. Their relationships with other sites were

found to extend beyond local authority boundaries and indeed beyond local county and local regional boundaries.

5.4 Indicators of economic activity

This section will review the findings relative to GA economic activity, drawing upon the secondary surveys and analysis outlined in Chapter Four. As was discussed in Chapters Three and Four, it was decided to focus resources upon a financially based indicator of consumption, *GA Direct Expenditure*, accepting this would only provide a partial view of economic activity. In the following this financial measure is detailed, and then used to illustrate the spatial distribution of GA activity, whilst in Chapter Six it is applied to the LPA planning framework. But, before turning to the indicator of GA's consumption, the following will discuss other findings that add to its partial view, starting with an estimate of GA direct employment, the financial profiles of businesses surveyed and the capital value of GA aircraft.

Employees and volunteers

Whilst many general aviation employees were pilots (flying business jets and helicopters or training other pilots), the industry also employs a wide range of other skills from air traffic, aircraft maintenance, design engineers, administrative and catering staff. In addition to paid employees it became clear from the field visits, small aerodromes also relied upon the contribution of volunteers, who helped to organise clubs and staff facilities. Volunteers however, have not been included in the following, in view of the difficulty of calculating full time equivalent staff, given the highly varied nature of volunteer work.

Aerodrome Category	Average GA Staff / Aerodrome	No. Aerodromes in England	GA Staff at Aerodromes	Estimated GA Staff off site	Total GA Staff
Category A	144.2	21	3,028	721	3,749
Category B	146.4	17	2,489	592	3,081
Category C	28.7	52	1,494	356	1,850
Category D	5.1	44	223	53	276
Category E	2.7	140	381	91	472
Category F	0.4	209	84	19	103
Helicopter Sites	0.2	160	32	8	40
Military Airfields	-	48	-	-	-
Unpublished	0.2	432	86	21	107
		1,123	**7,817**	**1,861**	**9,678**

Table (5.10): Estimated total GA staff employed in England by aerodrome category

The *Aerodrome Operators'* and the *Manufacturers and Traders* surveys (Lober, 2004d, 2005a) were used to establish an estimate of direct GA full time employment. The aerodrome survey established the levels of employment at 164 aerodromes throughout England, in terms of direct aerodrome employees and third party employees directly engaged in aviation related businesses. The manufacturers and traders survey established the ratio of GA employees located at aerodromes and those employed elsewhere. The ratio was 100:24, which suggested that 19% of staff were not actually employed at an aerodrome site. Table (5.10) shows how direct GA employment in England was estimated, by aerodrome

categories, to be 9,678. By scaling-up this information, based on aircraft activity across the UK, it was then possible to estimate a total direct employment of 11,660 employees for all regions of the UK.

Businesses involved with general aviation

As discussed in Chapter Four, the CAA's secondary dataset of aircraft registrations, G-INFO, was segregated into *GA Business* and *GA Private* owners. Table (5.11), which summarises aircraft ownership, served to illustrate the level of businesses involved with GA. As can be seen, a total of 2,157 different limited companies/sole traders were identified as registered owners of aircraft. On average these businesses operated 2.4 aircraft, with 50% of business aircraft registered to only 12% of owners.

	Registered aircraft	Registered owners	Aircraft / Owner
Airlines (CAT)	920	39	23.6
GA Business	5,195	2,157	2.4
GA Private	11,646	9,726	1.2
	17,761	**11,922**	**1.5**

Table (5.11): Aircraft and owners by category, G-INFO 2005

Manufacturers & aircraft sales	**Engineering**
Aircraft or Engine Manufacturers	Maintenance & General Overhaul
Aircraft Sales & Brokerages	Engine Overhaul
Business & commercial aviation	Avionics Servicing & Supply
Air Taxi & Charter Operators	Military Services
Air Ambulance Operators	Aircraft Survey/Weighing/Painting
Cargo Operator/Handlers	Spares & Equipment
Corporate Operators	**Airfield & fixed base operations**
Fractional Ownership Schemes	Airfield/Handling/Fixed Base Operations
Charter Brokers	Fuel Manufacturers/Distributors
Aircraft Management	**General/Other**
Commercial aerial work	Computer Services
Agricultural Aerial Work	Publishing/Pilot Supply
Photography/Filming	Finance/Insurance/Legal
Surveying/Traffic Patrol	Consultancy/Advisory
Observation/Patrol/Oil Slick/Fisheries	Aircraft Parts Distributors
Aerial Advertisement	Banner Towing Equipment Suppliers
Air Displays/Air Sports/Special Events	Corrosion Control Specialists
Flying training	Avionics Installation/Design
Professional Flight Training	International Flight Service Provision
Private Flight Training	Pleasure Flights
Flight Simulator Training & Sales	Tender Analysis & Valuations
Self Fly Hire	Other

Figure (5.1): GA Industry products and services - as categorised by BBGA

	Total GA sales turnover £ 000's	No. of business surveyed	Average turnover £ 000's
Manufacturers & Aircraft Sales	149,560	13	11,505
Business & Commercial Aviation	119,803	24	4,992
Commercial Aerial Work	1,885	3	628
Flying Training	15,365	11	1,397
Engineering	28,270	20	1,414
Airfield & Fixed Base Operations	31,235	13	2,403
General / Other	19,122	8	2,390
Total	**365,239**	**92**	**3,970**

Table (5.12): GA turnover per business surveyed

The Manufacturers and Traders survey (Lober, 2005a) provided a further insight to the companies involved in GA. Figure (5.1) lists the wide variety of companies belonging to the British Business and General Aviation Association (BBGA, 2005: 7). The main headings were used in the survey to analyse respondent businesses. Whilst the responses could not be scaled up to represent all GA businesses, since the total number of such businesses was unknown, the results of the survey never the less provided a useful portrait of GA business activity. For example, Table (5.12) estimated the average size of business responding. As can be seen, *Aircraft Sales* and *Business Aviation* were the two largest sectors. Out of 92 businesses surveyed, the average business had a turnover of almost £4.0 million.

	Total GA sales turnover £ 000's	Number of employees	Turnover/ employee £000's
Manufacturers & aircraft sales	149,560	368	406
Business & commercial aviation	119,803	342	350
Commercial aerial work	1,885	12	157
Flying training	15,365	196	78
Engineering	28,270	231	122
Airfield & fixed base operations	31,235	272	115
General/other	19,122	103	186
Total	**365,239**	**1,524**	**240**

Table (5.13): GA sales turnover per employee

The dominance of *Aircraft sales* and *Business Aviation* were also reflected by employment levels and productivity per employee. Table (5.13) showed the GA sales turnover per employee. *Flying Training* had the lowest ratio of turnover per employee whilst *Aircraft Sales* had the highest. In terms of employment prospects, *Aircraft Sales* was again the largest category, followed by *Business Aviation* then *Airfield Operations and Engineering*. A total of 1,524 employees were reported, or approximately 16 staff for each of the 92 businesses identified. Cross referencing with Table (5.10) suggested the survey reached companies employing 13% of the total staff used by GA industry in the UK. The average sales turnover per employee was £240,000, signifying they were also high value-added employers.

	Sales Turnover £ 000's	..... Imports ..... £ 000's	% of Turnover	..... Exports ..... £ 000's	% of Turnover
Manufacturers & aircraft sales	149,560	100,624	67%	20,797	14%
Business & commercial aviation	119,803	40,726	34%	68,718	57%
Commercial aerial work	1,885	606	32%	139	7%
Flying training	15,365	2,021	13%	1,005	7%
Engineering	28,270	9,353	33%	2,953	10%
Airfield & fixed base operations	31,235	387	1%	750	2%
General/other	19,122	6,833	36%	6,617	35%
Total	**365,239**	**160,551**	**44%**	**100,978**	**28%**

Table (5.14): Import and export levels by business category

The survey additionally probed levels of imports and exports, as summarised by Table (5.14). In total, respondents were net importers, with £160 million imported and £100 million exported; with the main importation cost attributable to imported aircraft and *Business Aviation* the main exporting sector.

Finally, since a number of respondent companies had non GA elements to their business portfolio, they were asked to what extent they were dependent upon general aviation activities. Table (5.15) shows that of the fifty-eight companies reporting, thirty-nine or 67% were solely GA businesses with no other interests; meaning they were totally dependent upon the GA industry. These companies contributed 81% to the total GA turnover sampled. A further eleven companies had some other interests but could not exist without GA revenues. Only eight companies had other business interests and could exist without GA sales. This suggested 86% of respondents were either totally or highly dependent upon the existence of a GA industry.

	GA turnover		No. Businesses	
	£ 000's	%		%
100% dependent upon GA	295,825	81%	39	67%
Could not exist without GA element	34,836	10%	11	19%
Could exist without GA element	34,578	9%	8	14%
Total	**365,239**	**100%**	**58**	**100%**

Table (5.15): Business dependency on GA

A conclusion drawn from the BBGA survey was that it represented a diverse industry. Whilst aircraft sales and business aviation services dominated the portfolio, with high turnover per employee, they were dependent upon smaller sectors, such as pilot training and aerodrome operations, which employed a similar level of staff but generated lower turnover ratios. It was felt the *Manufacturers and Traders* survey provided a useful insight to the nature of the larger GA businesses, which served as a backcloth to the calculation of direct expenditure associated with GA aircraft. Before outlining the direct expenditure estimate, however, the following will first review how the capital value of the GA fleet was estimated.

Capital value of the UK GA fleet

It was necessary to estimate the capital value of the GA fleet in order to calculate several aspects of the direct expenditure (depreciation, insurance premiums and expenses due to aircraft sales). At the same time, the following will show how the results added to an understanding of the underlying economic activity associated with GA.

Capital value was estimated, for each aircraft in the dataset, using market price information extracted from the Internet (Lober, 2006b). Several Internet web sites for aircraft sales were examined. But despite the considerable number of aircraft for sale via the Internet, it was clearly not possible to establish individual valuations for the numerous models of aircraft on the G-INFO register (nearly 3,500 different types and variants). Instead the method chosen was first to ascertain 2006 costs for representative new aircraft, for each of the 19 aircraft categories, and then to apply a market adjustment to each aircraft based on its age, in order to calculate current market values. The market adjustment was based an appropriate historical market price trend. Aircraft sales details were downloaded from a comprehensive Internet aircraft sales site (AVbuyer.com) and used to form a series of scatter graphs for each of the aircraft categories, comparing asking prices with the year of manufacture. The exponential line of best fit was established and the formula constants noted for each of the categories.

Chart (5.5) shows the results for Single Engined Piston aircraft, where the curve is defined by the formula:

$$Y_x = 171{,}761e^{0.0367x}$$

where, *y* is the asking price, *x* is the age of the aircraft, and 0.0367 is a constant.

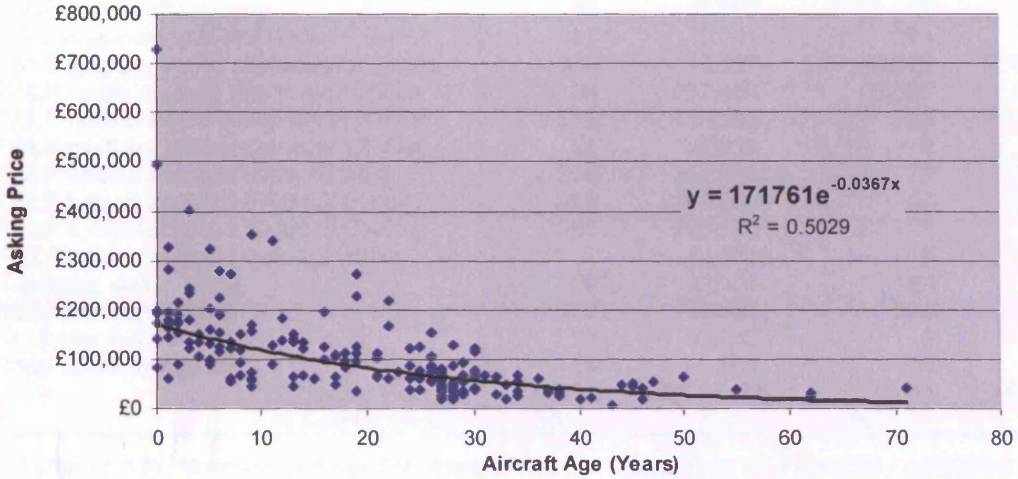


Chart (5.5): average market price trend for single engined piston aircraft

This process enabled a series of market price trends for each of the main aircraft groups to be established, as illustrated by Chart (5.6). Using this information and the dataset of actual aircraft by class and age, it was then possible to construct Table (5.16), which summarises the estimated capital value of all UK aircraft, split by business or private ownership, to be £3.8 billion. As may be seen, fixed-wing landplanes dominated both categories, although helicopters were generally owned by businesses, and light piston aircraft and microlights were predominantly privately operated. It was also clear that whilst private aircraft were numerically superior, owning 70% of the GA fleet, businesses dominated financially, owning the more expensive types and accounting for 70% of the capital value.

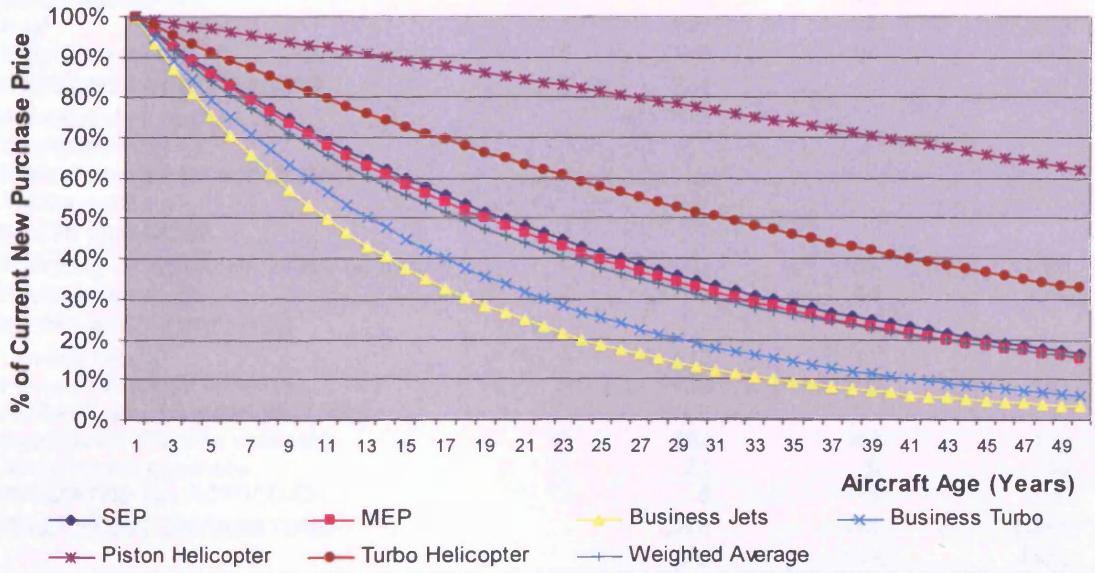


Chart (5.6): Market price trends for the main aircraft groups

	GA business		GA private	
	Aircraft	£ 000's	Aircraft	£ 000's
Airship/Balloon	509	8,067	1,270	16,847
Glider	819	14,499	2,101	8,900
Gyroplane	30	492	245	3,573
Hang Glider	2	5	10	25
Microlight single seat	17	53	500	1,687
Microlight twin seat	155	2,237	3,415	40,567
FW Amphibian/Seaplane	10	1,309	18	1,971
FW Self-launching Motor Glider	47	3,001	226	13,230
FWLP single engined piston under 750kg	335	18,817	2,772	161,541
FWLP single engined piston over 750kg	2,139	287,493	3,398	427,453
FWLP multi engined piston under 5700kg	615	113,550	338	57,859
FWLP multi engined piston over 5700kg	64	28,010	9	4,387
FWLP turbine engined under 5700kg	236	349,318	79	112,088
FWLP turbine engined 5700-50000kg	338	765,254	57	132,478
FWLP turbine engined 50000-100000kg	65	750,500	7	61,890
FWLP turbine engined over 100000kg	2	12,855	5	7,891
Helicopter under 750kg	199	27,504	120	16,669
Helicopter 750-5700kg	760	185,591	295	71,535
Helicopter over 5700kg	60	42,280	3	2,868
Uncategorised Aircraft	53	631	136	387
Total by Sector	**6,454**	**2,611,465**	**15,005**	**1,143,846**
% Split by Sector	30%	70%	70%	30%

Table (5.16): Number and capital value of the UK's business and privately operated aircraft

Direct expenditure associated with GA aircraft

In Chapter Three and Chapter Four, the overall methodology to estimate the measure *GA Direct Expenditure* was described and in the foregoing sections, the main variables involved have been outlined; aircraft, movements, hours flown and capital value. The following will now outline the results, leaving Appendix B to detail the supporting calculations.

	Estimate ref. no.	GA Business £ millions	GA Private £ millions	Total contribution £ millions
AIRCRAFT OPERATING EXPENSES				
Insurance	1	72	34	106
Hangarage/parking	2	26	25	51
Fuel	3	199	24	223
Maintenance	4	146	24	170
GROSS OPERATING MARGIN	5	221	-	221
Administrative overheads				
Depreciation				
Interest payable for aircraft purchase				
Pre tax profit				
PRIVATE FINANCES				
Financing (interest lost/payable on aircraft)	6	-	68	68
Depreciation	7	-	44	44
TRIP RELATED EXPENSES				
Landing fees	8	112	11	123
Pre and post flight expenses	9	138	18	156
AIRCRAFT SALES EXPENDITURE				
Incremental aircraft investment	10	132	47	179
Aircraft sales expenses	11	21	9	30
ASSOCIATED GA ACTIVITIES	12	6	14	20
TOTAL DIRECT EXPENDITURE		**1,073**	**318**	**1,391**
		79%	21%	100%

Table (5.17): Total direct expenditure associated with GA, by expenditure element

Table (5.17) summarises the results, revealing that in 2005, those directly using GA spent £1.4 billion, including tax, on activities associated with GA aircraft. The greatest direct expenditure was on fuel, at £223 million.

Table (5.18) provides a geographical view of the same expenditure and Table (5.19) shows the total direct expenditure by aircraft class. Both tables confirmed that, like capital value, business aircraft dominated expenditure in the GA industry and English expenditure overshadowed the other regions. Nearly 80% of the direct expenditure emanated from GA business owned aircraft, whilst 83% flowed from English aircraft and aerodromes.

	Number of aircraft	Direct Expenditure £000's	%
England	19,144	1,155,317	83%
Scotland	1,083	158,995	11%
Wales	619	26,812	2%
Northern Ireland	321	12,301	1%
Channel Islands	212	30,423	2%
Isle of Man	81	8,039	1%
	21,459	**1,391,886**	**100%**

Table (5.18): The geographical distribution of the GA direct expenditure

Aircraft category	GA business £000's	GA private £000's	GA total £000's	%
Airship/Balloon	4,065	7,355	11,420	1%
Glider	11,950	6,636	18,586	1%
Gyroplane	142	1,272	1,414	0%
Microlight single seat	57	1,756	1,813	0%
Microlight twin seat	1,082	20,764	21,846	2%
FW Amphibian/Seaplane	193	434	627	0%
FW Self-launching Motor Glider	910	3,462	4,373	0%
FWLP Single Engined Piston under 750kg	4,710	39,622	44,333	3%
FWLP Single Engined Piston over 750kg	76,967	107,070	184,037	13%
FWLP Multi Engined Piston under 5700kg	50,714	19,219	69,932	5%
FWLP Multi Engined Piston over 5700kg	11,223	1,002	12,225	1%
FWLP Turbine Engined under 5700kg	76,795	26,164	102,959	7%
FWLP Turbine Engined 5700 - 50000kg	318,796	34,147	352,943	25%
FWLP Turbine Engined 50000 - 100000kg	266,394	16,396	282,790	20%
FWLP Turbine Engined over 100000kg	639	-	639	0%
Helicopter under 750kg	8,660	4,883	13,543	1%
Helicopter 750 - 5700kg	124,869	27,156	152,025	11%
Helicopter over 5700kg	114,930	661	115,591	8%
Uncategorised Aircraft	341	433	774	0%
Total	**1,073,435**	**318,452**	**1,391,886**	100%

Table (5.19): Total direct expenditure associated with GA by aircraft category

By analysing the location of aircraft, using the Air-Britain register, it was also possible to estimate the direct expenditure by aerodrome. Chart (5.7) indicates the number of aerodromes, total direct expenditure and percentage contribution for each category. It can be seen that 66% of expenditure was associated with Category A and B sites. Cross referencing Chart (5.7) with the earlier aerodrome location maps showed that Map (5.1), which indicated 90 Category A, B and C sites, accounted for £967 million or 84% of expenditure, whilst Map (5.2) which specified 393 Category D, E and F aerodromes, correlated to £147 million or just 13% of the total English expenditure as estimated for 2005. The average expenditure per site of the 134 Category A, B, C and D aerodromes was £7.6 million, whilst the average expenditure per site of the remaining sites, including 'Others', equated to £136,000.

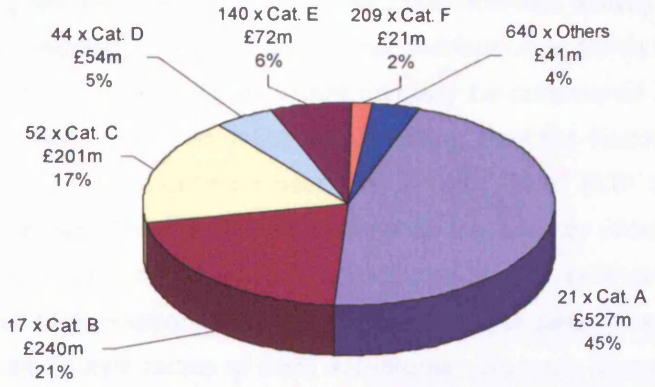
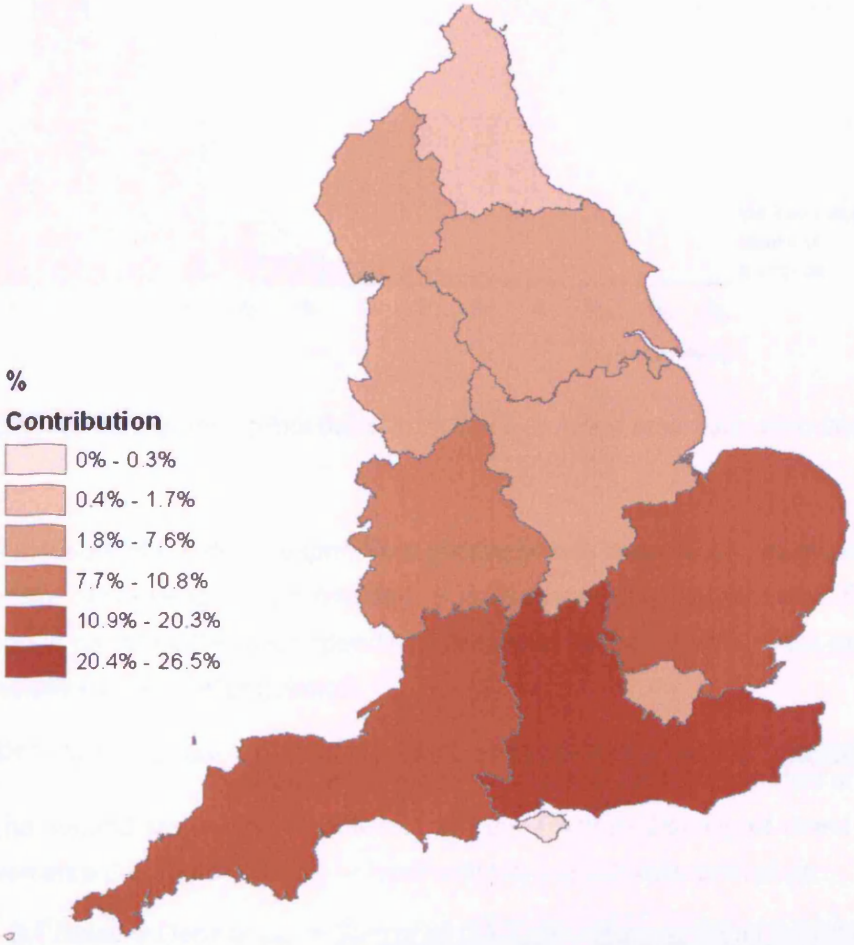


Chart (5.7): 2005 Direct expenditure by aerodrome category (England only)

An alternative view of the distribution of expenditure within England is provided by Map (5.3) which shows expenditure by English region[3]. As might be expected the South East Region expended the most, followed by the South West and the East of England. The least active region was found to be the North East. The north-south divide clearly applied to GA, with 71% of its direct expenditure located in the three regions of the south.



Map (5.3): Direct expenditure by English region

[3] *Note: Neither Map (5.3) or Map (5.4) include the balance of £41 million, attributed to an estimated 640 'Other' sites, since their locations were 'unpublished' and so not known.*

However, given the direct expenditure estimate reflected activity and capacity rather than demand, it was decided to explore the spatial distribution in terms of consumption per capita, on the assumption that population might normally be considered a broad indicator of likely demand. The basis of the calculation was a finding from the National Pilot survey that pilots generally flew from an aerodrome near their home. Chart (5.8) shows the data, set against a distribution curve, where the average distance travelled by pilots from home to their base aerodrome was found to be 18 miles. This fact was used to estimate an indicator of GA expenditure per head of population, where the population was determined by the number of people living within an 18 mile radius of each aerodrome. As such it captured the significant part of the distribution curve, rather like the concept of 'half life' used in calculations of radioactive decay, and reflected a reasoned and realistic catchment area of 324 square miles.

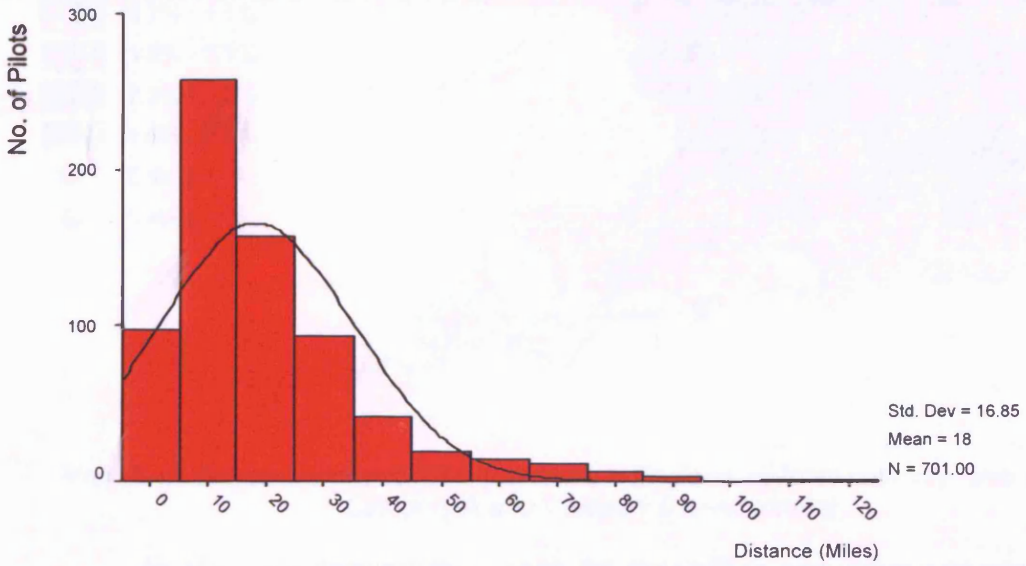


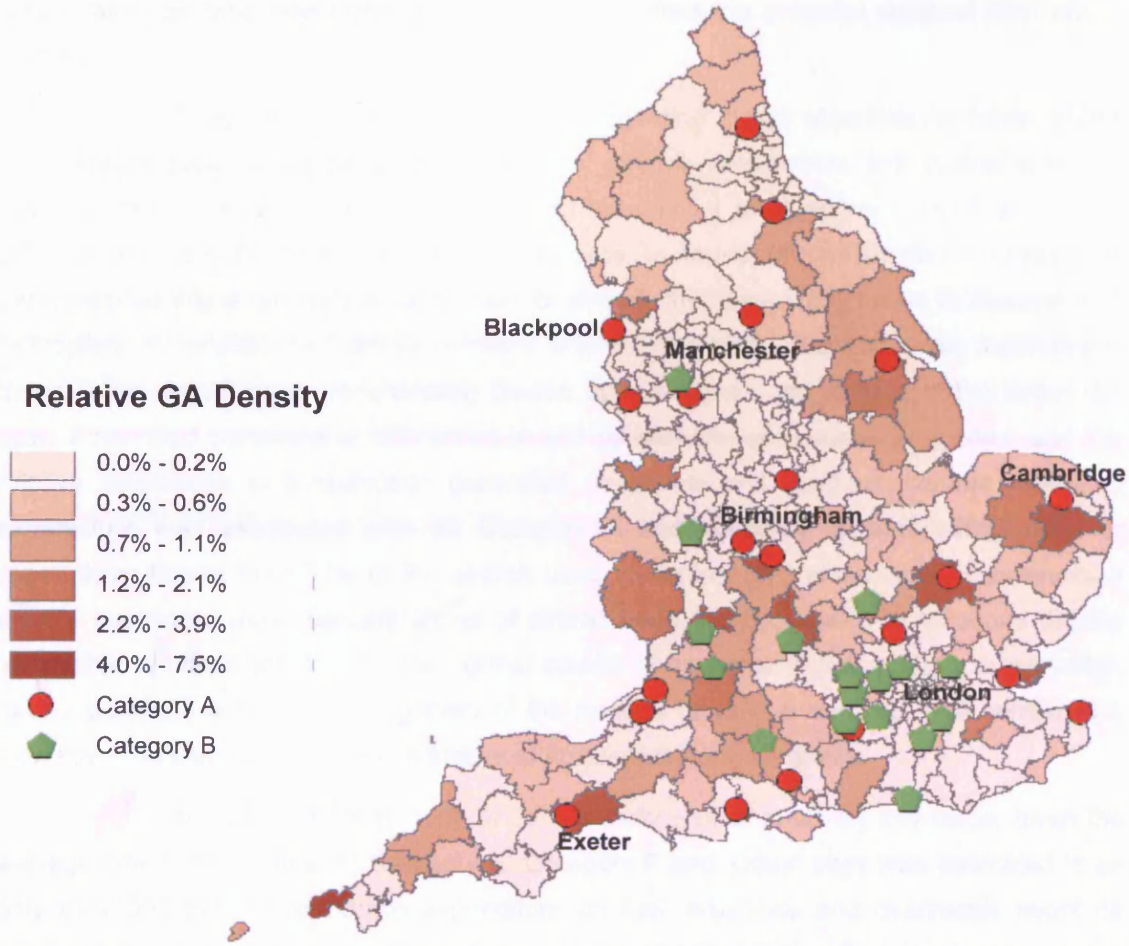
Chart (5.8): Distance pilots travel from home to reach their base aerodrome

A measure of GA direct expenditure per capita was accordingly developed where the 'relative density' of GA usage was calculated for each aerodrome location within England. The first step was to calculate the *GA Expenditure per capita* defined as the direct expenditure at each site divided by the local population:

$$GA\ Expenditure\ pc_{Location} = \frac{Sum\ of\ the\ direct\ expenditure\ of\ all\ aircraft\ located\ at\ a\ site}{Number\ of\ people\ living\ within\ an\ 18\ mile\ radius\ of\ the\ site}$$

The second stage was to estimate the *GA Relative Density* of direct expenditure within a given area (i.e. region, county or local authority), which was defined as:

$$GA\ Relative\ Density_{area} = \frac{Sum\ of\ all\ GA\ Expenditure\ pc\ within\ the\ area}{Sum\ of\ all\ GA\ Expenditure\ pc\ within\ England}$$



Map (5.4): GA relative density of expenditure in England, by local authority (also showing Category A and Category B aerodromes)

As Map (5.4) demonstrates, when the expenditure was expressed relative to the population surrounding each flying site, a very different picture of GA expenditure emerged. Although most of it still related to the south of England, large areas around London and the South East corner were found to be less pronounced in terms of expenditure per person. The areas where people spent most on GA activity relative to population were revealed as the rural areas of Yorkshire, Lincolnshire, Norfolk, Cambridgeshire, Wiltshire, Gloucestershire, Herefordshire and Devon. In contrast an area stretching from Birmingham to Manchester and the North East appeared to spend little on GA compared to elsewhere. Whilst it appeared reasonable to assume areas with high GA densities would be associated with areas of high demand, that is, for larger aerodromes located near urban fringes and therefore accessible to higher populations, the analysis of relative density suggested otherwise. For example, Map (5.4) showed a number of Category A and Category B sites located away from large population areas, such as Exeter, Blackpool and Cambridge were associated with high expenditure densities, whilst many of the other A and B sites appeared to exist in locations, for example around London, Birmingham and Manchester. Expenditure densities at these highly populated locations were a fraction of those in the more remote locations, possibly suggesting

activity at these otherwise significant sites did not reflect the potential demand from urban centres.

The foregoing, outlining the findings regarding direct expenditure, have added considerable detail to the earlier descriptions of aircraft, aerodromes and businesses. By establishing a common denominator, other than the number of aircraft or hours flown, it was able to financially illuminate the earlier statistics in terms of consumption activity. It demonstrated that a relatively small number of aircraft, the heavier fixed wing landplanes and helicopters, dominated the financial numbers in terms of capital value and direct expenditure. Since these aircraft were predominately owned by businesses and located at the larger GA sites, it revealed considerable differences in activity between aerodrome categories, and the relative differences in consumption generated by private and business owners. 66% of expenditure was associated with 38 Category A and Category B sites, whilst 79% of expenditure flowed from 30% of the aircraft used. Interestingly the analysis of expenditure density suggested these concentrations of aircraft were not necessarily in locations directly accessible to urban populations, the normal source of economic activity. This, in particular, raised questions about the homogeneity of the network relative to demand, and reinforced a view that it was a network based on historical accident rather than design.

It also suggested that much of GA's activity was of relatively low value, given the average direct expenditure for Category E, Category F and 'Other' sites was estimated to be only £136,000 per annum. Since expenditure on fuel, insurance and overheads might be assumed to flow to national companies, and so would not directly affect local incomes, the implication was that small GA sites, especially those below category D, were unlikely to contribute significantly to local economies.

A question of scale and significance

As covered in Chapter Three, the estimate of direct expenditure on GA activity as presented in this thesis was not directly equivalent to the economic impact of GA or to its direct contribution to gross domestic product. However, prior to this research there was no understanding of the relative importance of each sector within the GA industry, by aircraft type, or by category of aerodromes. It is therefore held, that the foregoing account of direct expenditure has improved, if not defined, the understanding of GA's economic activity across the UK. It has highlighted the significance of business aircraft, challenging the possible misconception that GA was confined to private owners and small aircraft, whilst also suggesting many small sites may not contribute significantly, at least at an individual level, to local economies.

Whilst these observations relate to its internal significant, the foregoing may also be used to draw some conclusions about GA's external scale within the UK economy; despite the acknowledged differences between this analysis and traditional approaches. Compared to the total UK economy, achieving a £1,105 billion GDP in 2003 (National Statistics, 2006) or compared to well known industrial sectors like the oil and gas industry, printing and publishing,

food manufacturing or the mobile phone industry, with typical contributions to GDP in the range of £20 - £40 billion (mmO2, 2004), it may be said GA is clearly, from an economic standpoint, not a significant industry. However, it is equally not an insignificant one, and therefore deserves some political, academic and governmental consideration. A conclusion drawn was that the significance of GA may not lie in its own direct economic activity, but in its intimate relationship with other businesses, particularly the commercial air transport sector and those that provide essential services though the use of aerodromes. Prior to this research, with no clear basis for evaluating GA consumption, even this simple conclusion could not have been made.

5.5 A spiral dive?

This chapter commenced against a background of strategic-local tensions, and accusations of poor treatment by some planning authorities, as voiced during the House of Lords debate in 2001. It was also alleged there had been a 28% fall in GA movements at ten of the larger aerodromes and a 40% decline in issuances of pilot licences, such that "*GA has entered a spiral dive*" (Harnett, 2005b).

The situation regarding pilots was reviewed and a conclusion reached that a more likely scenario was that the number of active pilots had simply plateaued in recent years, rather than declined. A similar plateauing effect was then found in the number of hours flown by CAA registered aircraft, although it was understood not all aircraft in the UK were reflected in the calculations, since up to 7% of aircraft (FRAs) were estimated to be registered through overseas countries. So it could not be said, as implied by Dr. Harnett, that the number of flying hours, and therefore movements, had necessarily declined. Indeed, running counter to the argument of an overall decline was evidence that the supply of aircraft appeared to be growing at a minimum rate of 4% AAG, even without adding in FRAs. A review of past Air-Britain hardback publications indicated the number of FRAs had risen from 320 aircraft in 1999 to 1,092 in 2005 (Wormersley B, 2005), confirming the CAA's view that the number had grown in recent years. Using this information, the overall growth in aircraft was re-estimated at a 4.5 % AAG since 1984. Given the number of hours flown did not follow the growth in aircraft numbers, it was concluded other factors may be influencing the longitudinal trends. It was therefore thought worthwhile to investigate the conflicting evidence and possibly reveal those factors.

The paradox of aircraft utilisation

It was decided to probe the relationship between number of aircraft and the hours flown, by interrogating the CAA data for registered aircraft. Chart (5.9) was created, which demonstrated that until 1990 increased numbers of aircraft translated into increased flying activity, but after this period the increased numbers of aircraft had no effect on the number of hours flown. It was realised that although Chart (5.9) plotted two individual parameters, hours flown per annum and the number of aircraft, it effectively depicted the trend in *aircraft utilisation*: defined as the average hours flown per annum, per aircraft.

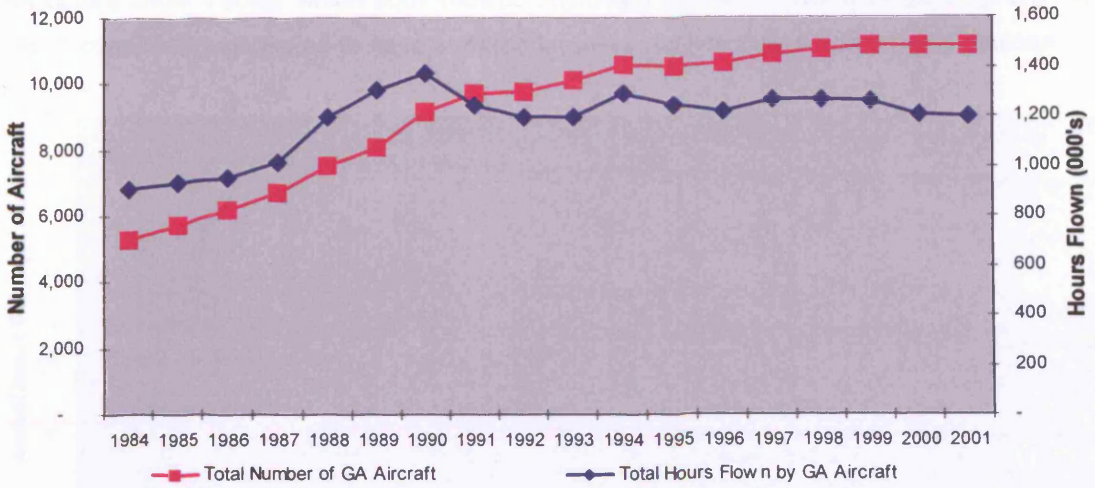


Chart (5.9): The relationship between the number of GA aircraft and hours flown p.a.

However, it was not clear at first, if the relative changes in aircraft utilisation evident in Chart (5.9) were due to changes in the mix of aircraft classes, the ratio of business to private aircraft, or an aging fleet. To explore the possibility of age related changes the dataset was divided into three further segments based on registration history:

- *1984 – 2001 Survivors:* Aircraft active in 1984, which were still active in 2001.
- *New since 1984:* Active aircraft that had been introduced to the register since 1984 and were still active in 2001.
- *Decommissioned since 1984:* Aircraft that were active during the period 1984 - 2000 but were no longer active in 2001

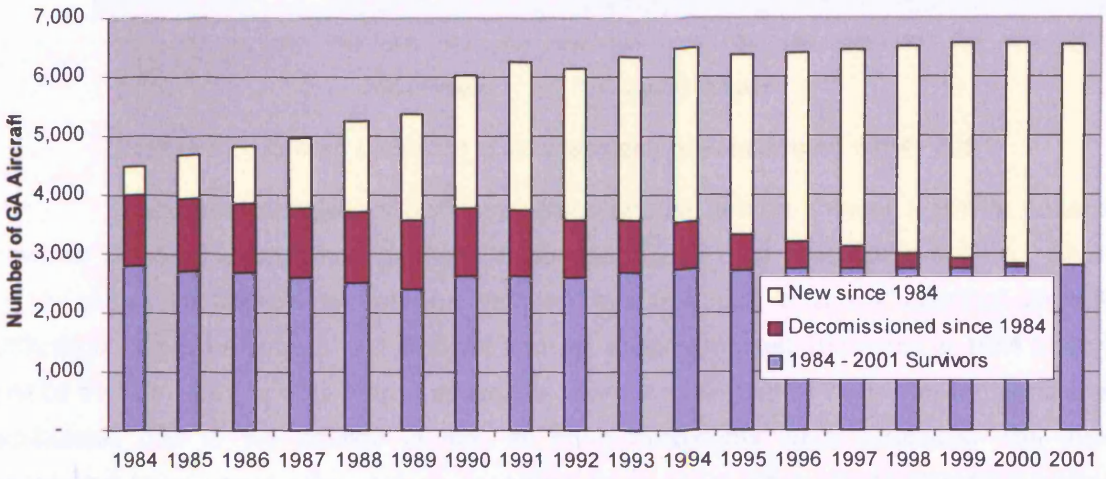


Chart (5.10): Fixed-wing landplanes, segmented by survivors, decommissioned and new

Chart (5.10) illustrates how these three segments were applied to traditional fixed wing aircraft and Chart (5.11) shows the aircraft utilisation for the same aircraft class. Using this methodology, it was found that most aircraft classes exhibited the same declining trends in aircraft utilisation, regardless of aircraft age. The exceptions were microlights and light

helicopters under 750kg, which both showed improving utilisation, whilst single engine piston aircraft over 750kg appeared to have suffered less of a decline than the remaining classes.

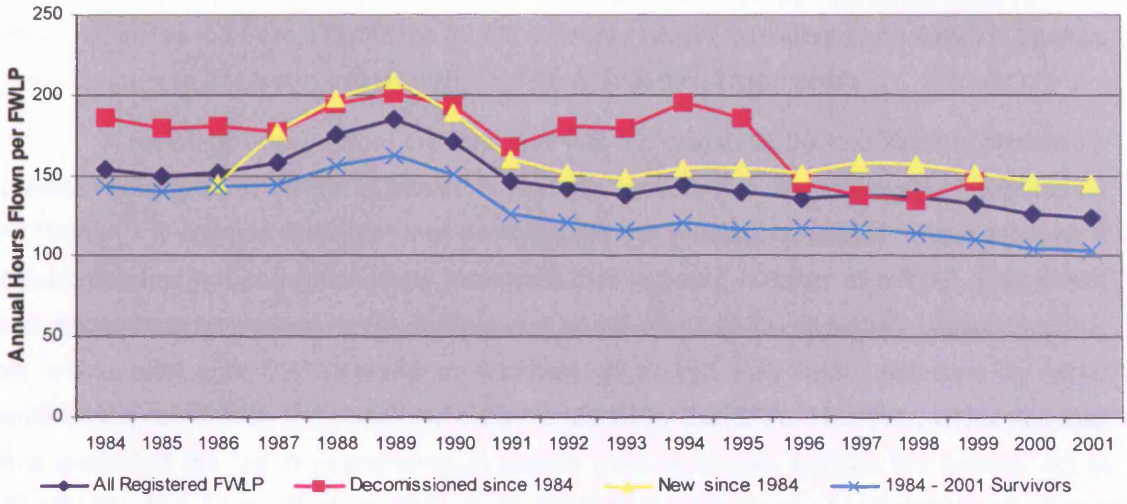


Chart (5.11): Fixed-wing landplane utilisation segmented by registration history

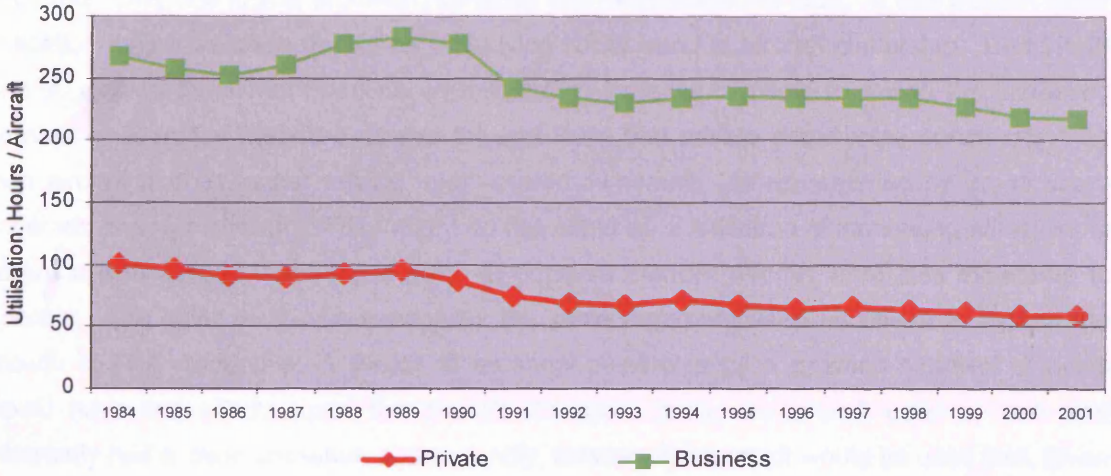


Chart (5.12): Aircraft utilisation of business and private aircraft 1984 - 2001.

Subsequent analysis of business versus private aircraft showed a similar pattern, however business aircraft had generally experienced less of a percentage decline. Chart (5.12) shows the difference between privately operated and business operated aircraft. Utilisation for private aircraft had dropped from an already modest 102 hours in 1984 to only just 58 hours in 2001, a 43% drop in seventeen years. An element of this downward trend was attributable due to the change in mix, as more microlights were introduced with their associated lower usage rates, but as described above most other private classes exhibited lower utilisation rates. For example, fixed-wing landplanes had grown at a rate of 2.8% AAG in aircraft numbers but only 0.6% AAG in hours flown with the effect that their utilisation rate had fallen from 107 to 74 hours, a drop of 31% (or an annual average fall of 2.2%).

The picture for the business aircraft was not distinctly different. Measured in terms of aircraft numbers, business aircraft increased in numbers from 2,229 to 3,458 over the full period, representing a modest 2.6% AAG, whilst hours flown moved from 595,000 to 751,000,

an even more modest 1.4% AAG. Consequently utilisation fell from 267 to 217 hours, a 19% fall in seventeen years. Noteworthy within this decline was the utilisation fall for business helicopters. Helicopter numbers increased from 275 to 666 (+142%) over the period but hours flown only increased from 176,000 to 223,000 hours (+26%), resulting in a utilisation change from 642 hours to 335 hours per aircraft – a 48% drop in seventeen years.

A conclusion drawn from the data was that the long term fall in utilisation, provided a possible explanation of the fall in movements at key aerodromes, as previously highlighted by Dr. Harnett. It seemed possible, that even though the number of aircraft had increased, if aerodromes had not correspondingly increased their resident number of aircraft, they would have experienced a decline in GA activity due to the effect of lower aircraft utilisation. If so, this would also infer the increase in numbers of aircraft had been absorbed by other aerodromes, rather than the traditional sites monitored by the CAA. However, whilst this may have explained the fall in movements at certain sites, it did not explain the general fall in aircraft utilisation. Low utilisation can only be attributed to over capacity of equipment relative to demand, yet this mathematical explanation did not serve to identify the reason why it had occurred. Only one logical argument surfaced that rationalised the facts. It was thought lower utilisation may have been due to an underlying social trend in aircraft ownership. Chart (5.2) had suggested there has been no corresponding increase in pilots to match the increased number of aircraft. Therefore, it was thought likely that private pilots were purchasing their own aircraft and no longer relying upon shared ownership (as represented by group share schemes and club aircraft). They might do this either as a reflection of increasing affluence, in common with second homes and cars, or because modern aircraft were less expensive to operate. The latter point was essentially the same argument used by others to explain the growth in FRA ownership. A switch to personal ownership by a growing segment of pilots would have two effects upon the aircraft utilisation; firstly, an aircraft used by one pilot inherently had a lower utilisation and secondly, existing club aircraft would be used less, given fewer club members.

This explanation for the fall in activity at traditional sites and overall reductions in aircraft utilisation, through changes in ownership patterns, challenged the view GA was in a 'spiral dive', by suggesting more of a *status quo* situation, but it also raised other questions. Was the increase in aircraft numbers being absorbed by smaller sites and if so, was this due to adverse economic factors or another social trend towards private airstrips? Either way, it had appeared to have implications for those concerned about air safety, given a dispersal of flying activity away from a few established sites, to many smaller sites, would make it more difficult to control aspects of flight safety (aircraft maintenance, pilot competence etc.). From a planning perspective, it might equally make controlling the externalities of aviation activity more difficult and so it was decided to include a discussion of this issue with aerodrome operators during the field visits.

5.6 Conclusions drawn from this chapter

Based on the methodology outlined in Chapter Three and Chapter Four, this chapter has described the total number of aircraft, movements, people and aerodromes associated with GA, whilst also indicating the nature of its businesses, its relative consumption and spatial distribution. Several conclusions have already been drawn from the data presented. The following will summarise these conclusions and also make several other points based on the total picture that has evolved.

1) Whilst the general public attended air shows, visited museums and benefited from access to emergency services in large numbers, the actual number of enthusiasts and employees involved in GA was limited and measured in the low 100,000s rather than millions, as shown by Table (5.1) and Table (5.10). Consequently, from an electoral viewpoint it would seem issues about GA were unlikely to be raised to a national level and the focus would remain at the local level, where the externalities of flying were most obvious.

2) In 2005, the total number of movements by GA aircraft was estimated to have exceeded 4.5 million, compared to 2.6 million recorded for CAT aircraft within the UK. The GA movements occurred at over 1,100 different sites, although it had been shown, 83% of movements were associated with just 134 Category 'A' to 'D' aerodromes. There had been a 4.5% growth in the total numbers of aircraft since 1984 to over 21,000 aircraft, and significant shifts in the types of aircraft flown, with trends towards lighter, lower cost types and foreign registrations, particularly of more complex aircraft. As such it became clear that the GA industry did not appear to be in decline, as some had suggested, but that certain sections within the industry were undergoing rapid changes and this was reflected in the tensions created.

3) The spatial distribution of sites was considered and the view expressed that the connectivity between sites was an important factor in the viability of individual sites and of the network as a whole. It was shown how relationships with other sites extended beyond local authority boundaries and indeed beyond county or even regional boundaries. Although it would first require a more in-depth transport analysis, this initial research into connectivity suggests planners might have a role to play in providing a more uniformly distributed aerodrome network. It may even be possible that the CAA could lead the way, by establishing a spatial plan to guide planners about the future structure of the GA network.

4) Over two thousand small companies were found to own aircraft and contribute 79% of the total expenditure associated with aircraft, as shown by Table (5.15) and Table (5.18). The survey of GA manufacturers and traders provided an insight to the nature of larger GA businesses. They were seen to be specialised companies as 86% said they were highly dependent upon the GA industry. GA provided employment and economic activity to a wide range of businesses and it was not solely a leisure activity for private individuals as sometimes portrayed. Furthermore, although aircraft sales and business aviation services dominated the portfolio, they were inherently dependent upon the smaller sectors, aircraft maintenance, pilot training services and the existence of suitable aerodromes.

5) It was estimated £1.4 billion was directly spent on GA aircraft activity in 2005. Although the methodology used was not the same as traditional impact assessments or sector evaluations, it was felt it provided a sufficiently robust result to suggest, GA was, at least when compared within the aviation industry, not an insignificant sector and deserved its share of political, academic and governmental consideration.

6) The use of direct expenditure as a common denominator enabled the aircraft datasets to be interrogated, revealing 66% of expenditure was associated with 38 Category A and Category B sites, whilst 79% of expenditure flowed from 30% of the aircraft owned by businesses. The corollary, of such a concentration of economic activity, was that much of GA's activity must be of low value. The average direct expenditure for category E, F and 'Other' sites was only £136,000 per annum. Given most of the expenditure, on fuel, insurance and overheads, would not directly affect local incomes, it was considered reasonable to assume many small GA sites, especially those smaller than category D, did not contribute significantly to local economies.

7) The trends in aircraft utilisation illustrated by Chart (5.11) and Chart (5.12) provided a unique and critically significant by-product of the secondary data analysis. Prior to this research, it had not been realised that the growth in registered aircraft numbers had not resulted in any increase in flying activity since 1990, as shown by Chart (5.9). Lower aircraft utilisation appears to have masked an underlying social change in ownership patterns which, when linked to evidence of falling activity at traditional sites, as in Chart (5.1), raised concerns about the dispersal of flying activity from controlled environments; where not only the externalities of flying but flight safety might not be so easily be controlled.

8) Finally, the fact that the research outlined in this chapter was necessary as a basis for the rest of the thesis highlighted the need for the GA industry, and the CAA, to consider how to better understand and track key measures for the future. Prime examples exposed by this chapter were the lack of detail about pilot recruitment / retention rates and the previously uncharted trends in aircraft utilisation. A more useful classification of aircraft types and owners on the CAA register would significantly improve future analysis, and a categorisation of aerodromes, acceptable to the industry, would facilitate a better understanding of the significance of individual sites.

A unique contribution

This chapter has endeavoured to describe the shape, size and value of GA in a way hitherto impossible. It makes a significant and unique contribution to an understanding of the industry that is in line with the original research aim, and which has already informed policy debate (CAA, 2006d). It was based on primary data gathered from four national surveys and twenty-six aerodrome visits plus secondary data collected from a wide range of sources, from flight guides and the internet, to datasets available from the CAA. The secondary data was furthered combined and analysed to provide insights into GA not previously explored or published. For example, the analysis included cross referencing CAA with Air-Britain datasets

to determine the geographical distribution of aircraft, using cluster analysis to categorising aerodromes into six different groups, estimating the number of foreign registered aircraft operating in the UK, describing the nature of GA flights including the interconnectivity of flights, providing a financially based view of GA consumption by aircraft and aerodrome, and analysing aircraft utilisation rates across the years and aircraft types.

The main purpose of the chapter was to provide an enhanced setting for the LPA survey and subsequent field visits. Based on the data presented a number of conclusions were drawn; highlighting the localised political impacts of aerodromes, possibilities for a spatial plan, issues arising from underlying social changes, GA's business rather than leisure dependency, its relative national and local consumption and finally the need for better analysis by those representing the industry. On the basis that Objective One and Objective Two have been satisfied, the following chapter will continue the path set out in Figure (1.2), by outlining the results and conclusions of the Local Planning Authority Survey for England.

CHAPTER SIX: A LOCAL PLANNING AUTHORITY SURVEY

Based on the LPA survey, this chapter focuses upon Objectives Three and Four; to 'test out' the ESRC findings regarding GA and to use the LPA survey to explore the three research hypotheses. It highlights confirmatory and conflicting aspects between the two surveys, and then examines the responses from the LPA questionnaire, whilst probing the LPA framework developed in preceding chapters. Inferences are drawn from the survey conclusions in preparation for the field visits, which will be discussed in the following chapter.

6.1 One survey, two objectives

This chapter is concerned with the results of the local planning authority (LPA) survey, which was aimed at gaining closer insights concerning local-strategic tensions. In Chapter Three, four objectives were set out and in Chapter Five, the first two objectives, which reflected the view that the LPA survey should be supported by a comprehensive and detailed analysis of secondary datasets, were essentially accomplished; leaving this chapter and the next to address the third and fourth objectives. This chapter reveals the results of the LPA survey, and Chapter Seven describes the findings of field visits to twenty six aerodromes and five local authorities. Figure (4.6) in Chapter Four illustrated the process, which is repeated below for convenience.

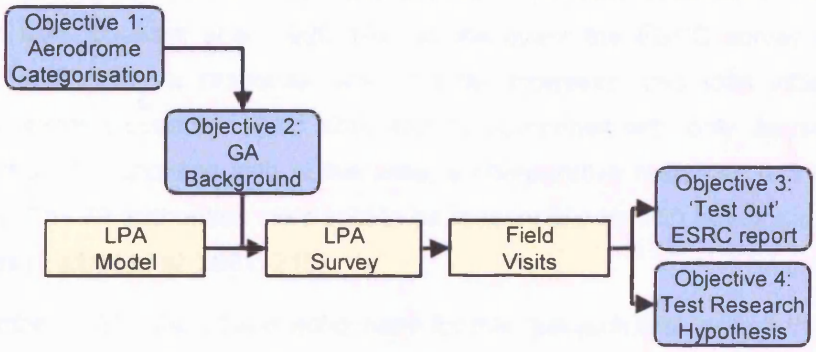


Figure (4.6): Schematic for achieving Objectives Three and Four (from Chapter Four).

Objective Three related to the 'testing out' of the earlier ESRC research project with regard to its GA findings and consequently, the following section will focus upon the questionnaire results associated with this objective, by means of comparing the two studies. The balance of the chapter will outline the survey results that related to Objective Four, which was aimed at testing the three hypotheses developed in Chapter Two. In both cases, the emphasis will be on the LPA survey results, for as may be seen from the schematic plan shown by Figure (4.6), final conclusions concerning Objectives Three and Four must wait until the field visits have been reviewed in Chapter Seven.

6.2 A comparison with the ESRC findings

As mentioned above, this section will outline the results of the LPA survey that relate to Objective Three and the 'testing out' of the original ESRC research. Chapter One first

referred to the origins of the research and the ESRC project by Gallent *et al*, whilst Chapter Three identified the three elements felt to be lacking in the ESRC report. It was seen to lack a comprehensive understanding of the case study background, particularly in respect to the number and distribution of aerodromes. It also did not relate the significance of individual aerodromes to any findings, for example, by categorising sites according to physical attributes, and it provided no insight into possible correlations between different aspects of planning's treatment towards GA. Chapter Five began to address the first two issues, of providing a substantive background to the case study and categorising aerodromes, and this chapter continues the process. By comparing the questionnaire responses between the original ESRC research and this research, the approach will be to triangulate results and provide additional insights; first by comparing questionnaire response rates and then by exploring differences between the surveys, with respect to non-flying development, and the regulation of flying activity. Other comparative findings, which were based on field visit observations, will be dealt with in the following chapter, so completing the tasks needed to achieve Objective Three.

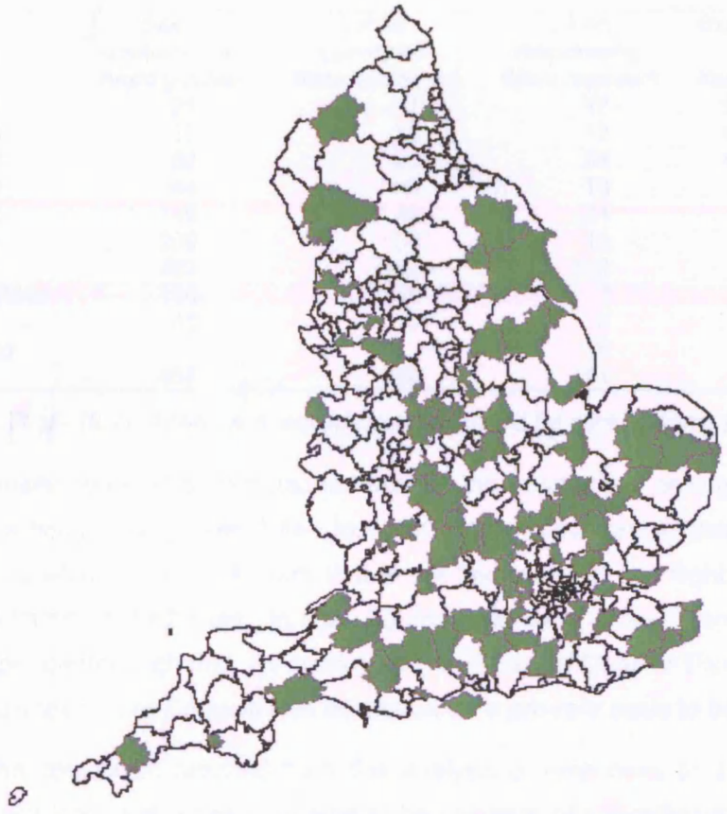
A revealing response

The original ESRC questionnaire was posted in 1998 to 317 English and Welsh local planning, unitary and National Park authorities; a total that included 284 English LPAs. It was said "*strenuous efforts were made to maximise response rates [...] however, it is difficult to secure high response rates [...] some would find the topic irrelevant because of the lack of airfields in their district*" (Gallent *et al*, 1999: 10). In the event the ESRC survey received replies from 143 authorities, a response rate of 45%. However, this total included 52 authorities without either disused or used sites and 19 authorities with only disused sites; meaning that for the 72 authorities with active sites, a comparative response rate with this research was 23%. The 72 authorities were said to be responsible for 130 active sites across England and Wales (Gallent *et al*, 2001: 215).

In November 2003, when the questionnaire for this research was issued, there were 354 English local planning districts, unitary authorities and national parks. In an attempt to improve upon the response rate achieved by the ESRC team, GIS techniques were used to identify 247 authorities that were known to have at least one GA flying site, based on published sites within the three main flight guides. After a prolonged campaign involving reply cards, web and paper based questionnaires, email and telephone contacts, a total of 85 authorities responded to the survey, representing a 35% response rate. Although, as Map (5.1) illustrates, the spatial distribution of the response was reasonably uniform across the English Regions, and it was a better rate than achieved by the ESRC researchers, it failed to reach the hoped for response and at first it was felt to be a discouraging result. Then it became clear, that the response rate itself revealed aspects about planning authorities and aerodromes, which were perhaps not so clearly evident to the ESRC researchers, given they were unable to analyse responses by aerodrome classification.

Analysis of the returns showed that 36.5% of responding authorities had at least either a Category A or B site within their jurisdiction, and 74.2% had at least one Category D

aerodrome. Table (6.1) shows the survey response, where the 85 authorities have been identified by the highest category site within their districts. Given the response rate appeared to be influenced by aerodrome category, it seem to imply those authorities with smaller sites had failed to engage in the survey, perhaps because it was simply too low in their priorities.



Map (6.1): The geographical distribution of participating authorities (2003 survey).

Highest category site reported by LPA	Frequency	% of total	Cumulative %
Category A	19	22 %	22 %
Category B	12	14 %	36 %
Category C	26	31 %	67 %
Category D	6	7 %	74 %
Category E	12	14 %	88 %
Category F	6	7 %	95 %
Helicopter Sites	3	4 %	99 %
(No site reported)	1	1 %	100 %
	85	**100.0 %**	

Table (6.1): Analysis of LPA responses by highest category site.

This interpretation of the response rate was supported by another data view, which considered the responses as a function of aerodromes covered, rather than authorities reporting, as shown by Table (6.2). It showed many authorities, that had made the effort to reply, appeared to be unaware of all the sites within their district. Whilst the 85 respondents were known to have 202 sites within their boundaries, only 118 aerodromes were reported. Most of the unknown sites were Category E and F sites. This suggested the average LPA was aware of only 58% of the GA sites in its district, and it raised the possibility that the low

authority response rate may not have been solely because authorities felt their aerodromes too insignificant to warrant a response, but because in many cases the officers involved were unaware of having any sites at all in their district. On a more positive side, the survey response was seen to encompass 81 out of a possible 85 Category A, B, C and D sites, equating to a 95% 'strike rate' and a 60% sample of all such English sites.

Flying site category	Sites published in flight guides	LPAs surveyed: Sites expected	LPAs responding: Sites reported	Expected vs. Reported	Coverage % by category
Category A	21	17	17	100%	81%
Category B	17	12	12	100%	71%
Category C	52	33	33	100%	63%
Category D	44	23	19	83%	43%
Category E	140	49	24	49%	17%
Category F	209	68	13	19%	6%
Subtotal	**483**	**202**	**118**	**58%**	**24%**
Helicopter Sites	160	48	3	6%	2%
Military	43	8	5	63%	12%
Unpublished	-	-	35	n/a	n/a
	686	**258**	**161**	**62%**	**23%**

Table (6.2): Analysis of aerodromes covered by participating authorities

Finally, one other curious feature of the responses emerged. As Table (6.2) illustrates, although many sites failed to report known sites within their boundaries, others reported sites which were not known, that is not 'published' in the flight guides. These sites were termed 'unpublished' sites. In total, 35 unpublished sites were reported by 20 LPAs (or 24% of respondents) such that, as previously mentioned in Chapter Five, the total number of unpublished sites across England was estimated on a *pro-rata* basis to be more than 400.

The conclusion reached from this analysis of responses to the 2003 LPA survey, was that many local authorities appeared to be unaware of a significant number of published and unpublished GA sites within their boundaries. This finding perhaps ran counter to the impression given by GA supporters that LPAs were sensitive to any GA activity, except that based upon the earlier findings shown by Table (5.7) in Chapter Five, it was estimated the 'unknown' sites probably only accounted for about 11% of all movements nationally.

Non-flying development at aerodromes

It was suggested in Chapter Three, during the discussion about 'testing out' the ESRC research, that the level of mixed use development at aerodromes was possibly a significant factor to the economic viability of individual sites. Although additional rental income might be used to supplement flying activity, no attempt had been made to relate mixed use development to increased activity, yet a key finding of the ESRC report was that many aerodromes now supported non-flying developments and activities. It had found 73 out of 130, or 56%, of active sites accommodated non-flying uses. It was said to confirm a view that aerodromes "*now play host to a diverse array of new land uses*" (Gallent *et al*, 2001: 215), and where LPAs had, on average, 1.56 non-flying land uses at each site. Given the strength of these findings it was felt important to verify if the level of mixed use was a general feature of aerodromes or if it was specific to certain categories of site. If there was a relationship to the category of site, it might indicate that a local authority's approval of mixed use could indirectly

influence the economic viability of flying at that site. Comparative results are shown initially by Table (6.3), in the same format as the original study.

Non-flying Activity	..... Frequency ..... ESRC Survey	This Survey	..... % of sites ..... ESRC Survey	This Survey
Market Trading	5	6	7%	5%
Motor Sports	11	9	15%	8%
Museums	15	16	21%	14%
Retail Outlets	2	4	3%	3%
Industrial Parks	25	27	34%	23%
Business Parks	6	26	8%	22%
Shows / Festivals	17	24	23%	20%
Housing	3	3	4%	3%
Car Boot Sales	4	7	5%	6%
Other	26	49	36%	42%
Total	**114**	**171**	**100%**	**100%**
No. of sites	73	118		
Activities per site	1.56	1.45		

Table (6.3): Survey comparison: Non-flying activity on active aerodromes

	Aerodromes by category A	B	C	D	E	F	Total	%
Museum/Heritage	5	1	1	5	2	2	16	13%
Business/Office Development	7	6	7	4	1	1	26	22%
Retail Outlets	1				3		4	3%
Warehousing/Manufacturing	5	4	8	6	1	3	27	23%
Sports/Leisure/Youth Facilities	3	2	1	4		1	11	9%
Government – Prisons/Military		1	1				2	2%
Agriculture	2		5	6	2		15	13%
Housing			1			2	3	3%
Race Course – Motor/Horse		1		1			2	2%
Other Permanent Non-Flying Uses	2	1	4	3	4		14	12%
	25	16	28	29	13	9	120	100%
No. sites with permanent uses	**10**	**8**	**18**	**11**	**10**	**5**	**62**	
% of total sites	59%	67%	55%	58%	42%	38%	53%	
Permanent uses per site	**2.5**	**2.0**	**1.6**	**2.6**	**1.3**	**1.8**	**1.9**	

Table (6.4): Types of permanent non-flying activity

	Aerodromes by category A	B	C	D	E	F	Total	%
Motor Sports			5	3	1		9	18%
Market Trading			2	3	1		6	12%
Air Displays/Shows	5	1	5	3	3		17	33%
Other Shows/Festivals		1		2	4		7	14%
Car Boot Sales		1	2	2	2		7	14%
Other Temporary Non-Flying Uses			2	1	1	1	5	10%
	5	3	16	14	12	1	51	100%
No. sites with temporary uses	5	2	13	5	6	1	32	
% of total sites	29%	17%	39%	26%	25%	8%	27%	
Temporary uses per site	**1.0**	**1.5**	**1.2**	**2.8**	**2.0**	**1.0**	**1.6**	

Table (6.5): Types of temporary non-flying use

As may be seen, the two surveys showed broadly similar results, with approximately one and a half activities per site, and the most common non-flying activities being *Industrial Parks, Show/Festivals* and *Museums*, with the only significant difference appearing to be the number of *Business Parks* recorded. However, due to the classification of aerodromes used within this survey, as part of the 'testing out' approach, it was possible to examine non-flying

land uses, relative to the class of aerodrome. Table (6.4) and Table (6.5) show the results, where activities have been split into *Permanent use* and *Temporary use* and the category *Other*, has been expanded to show greater detail of the wide range of uses found. To complete the view of permanent and temporary uses, Table (6.6) shows the combined effect, where it was found permanent non-flying uses were evident at 59% of sites, and temporary uses at 35% of sites. Crucially, these tables illustrate there was no clear correlation between the category of aerodrome and the number of non-flying uses permitted (an observation confirmed statistically later in this chapter).

	Aerodromes by category							
	A	B	C	D	E	F	Total	%
Permanent use only	8	6	6	6	4	4	34	30%
Temporary use only	2		3		1	1	7	6%
Both permanent & temporary uses	5	2	12	5	7	1	32	29%
No permanent or temporary uses	2	4	11	6	10	6	39	35%
	17	12	32	17	22	12	112	100%
						Missing	*6*	
% with Permanent / Temporary uses	**88%**	**67%**	**66%**	**65%**	**55%**	**50%**	**65%**	

Table (6.6): Summary of permanent and temporary uses by aerodrome category

Whilst the broad conclusion drawn from this survey was therefore the same as that described by the ESRC study, that the use of aerodromes for alternative uses at active flying sites was indeed wide spread, but not universal, it also showed that mixed uses were not necessarily associated with the category of site. This meant that mixed use planning permissions were not necessarily associated with the level of flying activity. It was not possible, based on the survey, to support a view that either a more relaxed approach to mixed use permissions by local authorities enabled some sites to prosper or that a restrictive approach limited flying activity.

Regulating flying activity

One of significant findings of the ESRC research was the level of regulation found at flying sites, where it was found only 50% of the LPAs sought to regulate flying activity (Gallent *et al*, 2001: 217). This figure had been contested by the industry as too low (Bloomfield, 2006).

	..... Frequency		..... % of LPAs	
	ESRC Survey	This Survey	ESRC Survey	This Survey
Number of Movements	14	17	39%	41%
Aircraft type/Weight/Engine	28	21	78%	51%
Times of Day	24	22	67%	54%
Types of Activity	3	16	8%	39%
Takeoff/Landing	9	11	25%	27%
Other form of Regulation	21	19	58%	46%
Total planning conditions	**114**	**171**	**100% ***	**100% ***
			** of LPAs applying conditions*	
LPAs applying conditions	36	41	51%	62%
LPAs not applying conditions	34	25	49%	38%
LPAs responding to question	**70**	**66**	**100% ****	**100% ****
			*** of LPAs responding to question*	
Missing (n/a or non response)	3	21		
Total LPAs surveyed	**73**	**85**		

Table (6.7): Survey comparison: Use of planning conditions to regulate flying

The results from both surveys are shown by Table (6.7), in the same format as the original study. As may be seen this research agreed with the original survey, with far less sites being regulated that was held by GA supporters. This research did, however, find that LPAs were just as likely to apply conditions that regulated the type of activity (acrobatics, parachute jumping etc.) as other forms of control. It was also noted, probably because the revised questionnaire required detailed responses 'by aerodrome' rather than just by LPA, that only 66 LPAs out of 85 completed the conditions section, as shown by Table (6.7). Based on those 66 it was estimated, as also shown by Table (6.7), that 62% of LPAs used conditions to regulate flying, compared with 51% established by the ESRC study.

	Aerodromes by category							
Type of Planning Condition	**A**	**B**	**C**	**D**	**E**	**F**	**Total**	**%**
Number of movements	2	2	8	1	3	1	17	16%
Days used	1		4	1	1		7	7%
Aircraft type/weight/engine	4	2	7	2	4	2	21	20%
Times of day	6	1	8	2	3	2	22	21%
Types of activity	3	1	4	1	4	3	16	15%
Takeoff/landing	2	1	6			2	11	10%
Other form of regulation	5	2	2	1	1	1	12	11%
	23	9	39	8	16	11	106	100%
No. sites with conditions	8	4	13	3	7	6	41	
No. sites with reported	15	9	26	13	16	10	89	
% conditions vs. total sites reported	53%	33%	50%	23%	44%	60%	46%	
Est. No. published sites not known by LPA	-	-	-	3	17	43	63	
% conditions vs. sites reported & not known	53%	33%	50%	19%	21%	11%	27%	
Conditions per site reported	**2.9**	**2.3**	**3.0**	**2.7**	**2.3**	**1.8**	**2.6**	

Table (6.8): The use of conditions to regulate flying

Like the earlier comparison of non-flying land uses, Table (6.7) provided little insight into the distribution of conditions across the range of different aerodromes. Table (6.8) serves to address this point. As can be seen from Table (6.8), a total of 41 sites were subject to at least one condition, with most sites operating with two to three conditions. The first observation was, that given there were 89 Category A to F sites reported by the 66 authorities completing the conditions question, less than a half of these sites were actually controlled by planning conditions. However, given the earlier finding that LPAs appeared to be aware of only 58% of published sites, the percentage of sites operating with planning conditions was estimated to be nearer 27%, if the unknown, unreported sites were added to the total, as shown by Table (6.8). As might be expected, smaller sites were less likely to operate under planning conditions. This aside, provided the LPA was aware of the site, it was clear that the level of conditions, like non-flying land uses earlier, were not related to aerodrome category, since all categories appeared to be similarly controlled. Finally, Table (6.8) confirmed that, where conditions were used, they tended to be in multiples, since on average 2.6 conditions were in place per aerodrome surveyed.

The conclusions drawn from the analysis of conditions to regulate flying activity, were that it broadly confirmed the ESRC findings, but by categorising aerodromes and applying GIS techniques to verify LPA responses, it had been possible to demonstrate that for the 46% of aerodromes known to LPAs and regulated by planning conditions, a wide range of

measures were used, which seemed to be no strong relationship to the size of site. This seemingly overturned any preconceived idea that LPAs would have less need to regulate smaller sites than larger ones. Yet, at the same time, because there were many sites unknown to LPAs, and therefore not subjected to planning conditions, it inferred many small sites did not need planning regulation. If so, it was thought possible that the small sites, which were subjected to conditions of use, may have suffered from inconsistent regulation. Equally, it was also possible that such sites, at some stage, had created real issues for their local authorities for which the only remedy had been to apply conditions.

This point and others raised in the foregoing concerning Objective Three will be summarised at the end of the chapter, then carried forward to Chapter Seven and its discussion of the field visit findings.

6.3 Testing the hypotheses

The following sections turn to those LPA survey results associated with Objective Four. It will first outline the measures used for testing the three hypotheses, before discussing the empirical results and how they related to the LPA model developed in Chapter Three.

Chapter Four had explained how a simplified LPA framework was adapted to suit the LPA survey, to enable a practical and measurable set of attributes to be used to test the relationships between guidelines, the built environment and planning's influence and decisions. The original ESRC questionnaire provided the basis for these measurable attributes and as explained in Chapter Four, it was consequently extended and adapted to suit the LPA framework that had been developed. Figure (4.7) is repeated below, again for convenience, showing the seven 'direct' and four 'indirect' measures developed.

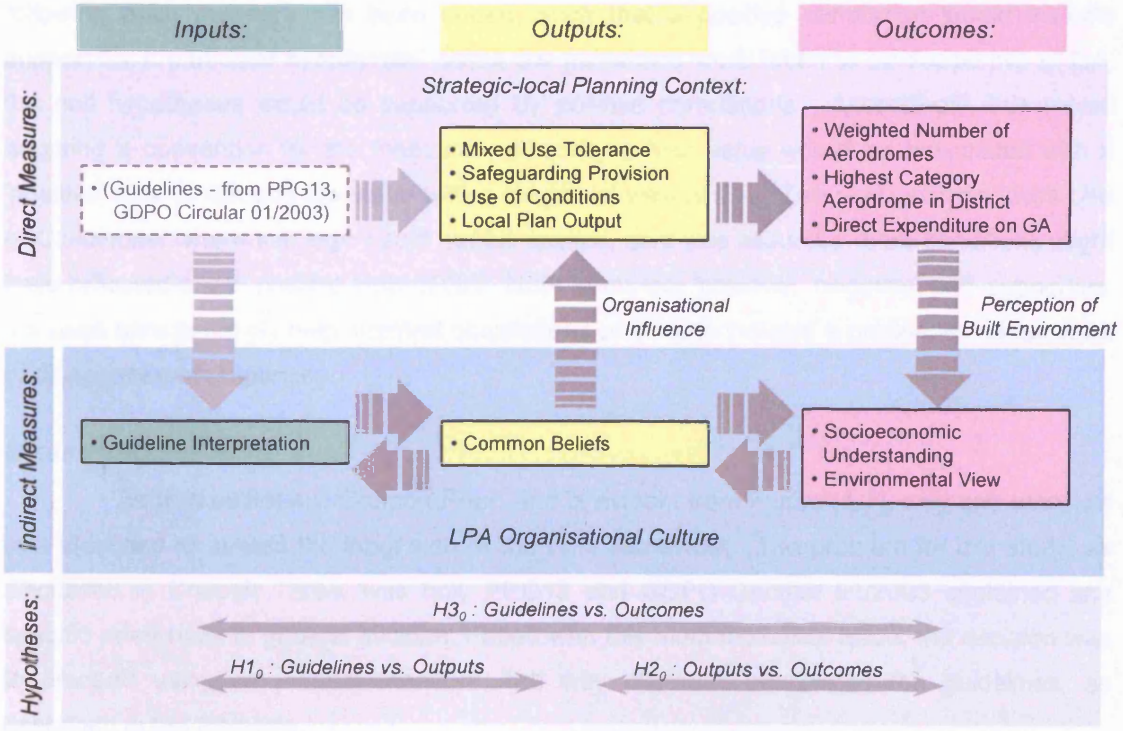


Figure (4.7): Measurable attributes within a simplified LPA framework (from Chapter Four).

The distinction between direct and indirect measures arose from the LPA framework first developed in Chapter Three, and then adapted in Chapter Four. Direct measures were identified as those attributes which existed physically in the input-output-outcome (IOO) sequence of events. They measured for example, the use of conditions and the existence of statements in the local plan about GA. On the other hand, indirect measures were based on attitudinal responses to statements in the questionnaire, which were intended to capture the values held by planners about physical events in the built environment. Like the direct attributes, they also measured aspects of the IOO sequence. They questioned, for example, the way local authorities responded to specific guidelines, and how respondents compared aerodromes to other similar transport and leisure land uses. In Chapter Four, the links in the IOO sequence were described as 'horizontal' relationships, whilst those suggested between direct and indirect attributes were described as 'vertical' relationships. It was felt that by disaggregating attributes into direct and indirect attributes, vertical and horizontal relationships, the framework would provide a sound basis for examining the three hypotheses.

Chapter Four discussed that to support the three null hypotheses, it would be necessary to establish relationships, between direct and indirect attributes, both vertically and horizontally. Figure (4.8) was then used in Chapter Four to show there were forty-five possible relationships suggested by the LPA framework. Later in this chapter, the results of the survey will be revealed to show which of these relationships were found to be statistically significant and how they either did, or did not, support the hypothesis.

The following outlines the seven direct and four indirect measures that were developed, grouped in terms of inputs, outputs and outcomes; leaving Appendix C to explain in greater detail how they were calculated. It needs to be emphasised, however, that in the following each measure has been coded, such that a positive correlation would indicate support for a particular hypothesis. Since the guidelines were taken to be supportive of GA, the null hypotheses would be supported by positive correlations. Accordingly, this meant adopting a convention for the measures, whereby a high value would be associated with a 'positive' view of GA and low value with a 'negative' view of GA. The only exception was *Use of Conditions*, where this logic could not be applied, as it was assumed more conditions might have reflected a less positive view of GA. Note terms like 'positive', 'negative' and 'supportive' are used here to simply help interpret correlations and not to indicate a preconceived approval or disapproval of responses.

Measuring the input side

As was outlined in Chapter Four, and is evident from Figure (4.7), only one measure was identified to assess the input side of the LPA framework. The problem for this study, as discussed in Chapter Three, was only PPG13 and GDPO Circular 01/2003 contained any specific references to general aviation. Faced with this methodological issue, the decision was to proceed using an indirect measure; the way planners' interpreted the guidelines, as described in the following.

1. **Guideline Interpretation**: Using three separate questions, respondents were quoted brief guideline extracts (two from PPG13 and one from the GDPO Circular 01/2003 concerning aerodrome 'safeguarding'). They were asked to select one of four progressive statements (or 'Don't Know') that best reflected how they felt their authority interpreted each guideline extract. Respondents' scores from each question were added together and averaged to provide an overall score. This score was intended to reflect how closely they felt their LPA interpreted PPG13 and the GDPO circular guidelines

.

Assessing planning outputs

As was explained in Chapter Four, the original ESRC questionnaire had included a number of questions which were felt could be used to assess the direct planning output from a LPA. They were adapted to provide the basis for one indirect and four direct measures as described by the following.

1. **Common Beliefs**: This represented the one indirect measure of planning output. The original ESRC questionnaire section titled 'Impacts - Real and perceived' was expanded to assess an LPA's organisational beliefs about GA. Respondents were asked to rate seventeen statements concerning GA on a scale of 'Strongly Agree' to 'Strongly Disagree'; for example, '*Noise considerations will generally outweigh any economic and social benefits resulting from flying*' or, in contrast, '*A local aerodrome can bring important high value business visitors to local towns*'. To achieve a quantitative score for this measure, each statement was identified as either negative or positive towards GA. Each respondent's total negative ratings were subtracted from the positive ratings, and then averaged to measure how positive statements were offset by negative ones.

2. **Mixed-use tolerance**: In the first of the four direct measures of planning outputs, respondents were asked to provide details of each aerodrome they had listed in their district, in terms of permanent and temporary uses. The number of such uses was summed across all the aerodromes in the district and averaged to represent the district's score.

3. **Safeguarding provision**: The second direct measure assessed the extent that authorities sought to safeguard sites from the intrusion of other developments (in line with GDPO Circular 01/2003). The number of aerodromes safeguarded was averaged to represent the district's score.

4. **Use of conditions**: The third direct measure of planning output asked respondents to provide details of each aerodrome in their district, indicating what type of planning conditions were used, if any, to regulate flying activity. The number of conditions applied at each aerodrome was summed across the district and the average per aerodrome used to represent the district's score.

5. **Local plan output**: This final measure of planning output measured if LPAs displayed their future intentions towards GA in local development plans. Provided references to GA were included in their local plan, respondents were asked to indicate, by aerodrome, the expected impact on flying (in terms of increasing, maintaining or decreasing activity). To achieve a quantitative measure, any restriction of flying activity was assigned a value of -1, any neutral action was given a zero value and any expansion a value of +1. These values were summed across all the aerodromes in the district and the average used to represent the district's score.

Outcome measures

Three direct and two indirect measures on the outcome side of the LPA framework were identified, as shown by Figure (4.7) and outlined in Chapter Four. The direct measures were calculated independently of the LPA survey, since there were either based on the use of GIS techniques and the categorisation of aerodromes, or on the evaluation of direct GA expenditure. As was also explained in Chapter Four, at the time the LPA survey was underway the estimate of GA direct expenditure had not been completed, so it was not until late 2005 that the third measure was applied and tested against the other measures. The indirect measures, termed *Socioeconomic Understanding* and *Environmental View*, described in the following, were intended to assess if planner's opinions about GA were related to their experiences gained from the local built environment. In other words, they were assumed to be indirect outcomes of the built environment, which itself was assumed to be an outcome of planning policy and intervention.

1. **Highest Category AD in District**: This direct planning outcome measure required GIS techniques to identify the highest aerodrome category in each planning district. Each district was assigned a value on a sliding scale, from Category A = 6 to category F = 1. The measure assumed, for example, that an authority with one Category B aerodrome, two Category D sites and one Helicopter pad would be grouped under Category B and assigned a value of 5, as would another with just one Category B aerodrome. The underlying belief was that an authority's approach to GA would be set mainly by the principle sites within its boundaries. Although an assumption, its advantage was that it provided an easily understood common denominator between different authorities.

2. **Weighted Number of Aerodromes**: This second direct outcome measure was also assumed to reflect economic activity. Like the above measure, it utilised GIS techniques to identify the number and categories of aerodromes in a district. The calculation assumed that each category had a descending weight (Category A = 1, Category B = 0.8 etc.). By multiplying the number of aerodromes in a category by the appropriate weight it was possible to arrive at a total figure that effectively equated to an equivalent number of Category A sites. Like the 'highest category' measure, it assumed an authority's approach to GA would be set mainly by the principle sites within its boundaries. But, by applying a weighting to the number of aerodromes it provided a practical means of distinguishing

between a district with, say, only one Category B aerodrome and another with, say, one Category B, Three Category D and four Category F sites.

3. **Direct Expenditure on GA**: The final direct outcome measure relied upon the calculation of direct GA expenditure as outlined in Chapter Four. To calculate the measure, the total direct expenditure of all aircraft located within a particular district, was estimated using the Air-Britain dataset which had provided the normal aerodrome location of individual aircraft.

4. **Socioeconomic Understanding**: This first indirect planning outcome measure was chosen to evaluate the relative socioeconomic value given by planners to GA activities. Two lists were developed of activities which might present similar land use issues to aerodromes; one each for leisure and transport uses (for example, 'Rifle Range' and 'Freight Terminal' respectively). To each list several GA uses were added (for example 'Grass Strip' and 'Urban Heliport'). Respondents were asked to rate how they felt about each activity's socioeconomic impact. To calculate a quantitative score, average ratings for non-aviation uses were deducted from those for aviation uses. The resultant reflected the extent that perceptions concerning non-aviation uses compared those of aviation.

5. **Environmental View**: The second and final indirect planning outcome measure was based on the same concept as that used to evaluate *Socioeconomic Understanding*. The relative ranking of GA land-uses, versus the other non aviation activities, provided a quantitative score which reflected perceptions of comparative environmental impacts.

6.4 Correlating measures

Figure (4.8) in Chapter Four indicated the correlations that might have been expected between the seven direct and four indirect measures. These covered the input-output-outcome linkages need to support the three null hypotheses identified in Chapter Two. In the following, the three hypotheses are considered in the light of the associations found. The intention will be to gain insights about the way LPAs relate to GA, but not to necessarily conclude on the soundness of the hypotheses. This is covered in Chapter Seven, where based on the secondary data analysis, the LPA survey and the field visits described in the same chapter, a view is taken about whether the hypotheses have been supported by the research findings, or not.

Figure (6.1) shows the results of the LPA survey using the same format as Figure (4.8) in Chapter Four, which highlighted those relationships needed to support the three null hypothesis or show evidence of the two 'vertical' linkages, *Organisational Influence* and *Perception of the Built Environment*. The 'Spearman's rho' correlation values, found between the seven direct and four indirect measures, are indicated for those that were found to have a statistically significant relationship. The direction of the relationship is shown as either positive or negative and its strength as 0.01 (highly significant) or 0.05 (significant) for an assumed two tailed distribution. As explained previously, measures were coded such that a positive association would indicate support for the null hypotheses.

To more clearly illustrate the contents of Figure (6.1), two results have been labelled by the letters 'A' and 'B'. The 'A' example shows a Spearman's rho value of + 0.385 for the statistical correlation between the attributes *Common Beliefs* and *Safeguarding Provision*. Colour coded blue, the use of a +ve sign indicates the relationship was positive, meaning higher scores for *Common Beliefs* were associated with a higher scores for *Safeguarding Provision*, and *visa versa*. The double ** sign indicates the relationship was statistically 'highly significant', at a probability value greater than 0.01 on an assumed two tailed distribution, meaning the likelihood of it being a chance, erroneous result was only 1%. In contrast the 'B' example shows a Spearman's rho value of - 0.279 for the statistical correlation between the attributes *Use of Conditions* and *Environmental View*. Colour coded red, the use of a -ve sign indicates the relationship was negative, meaning higher scores for *Use of Conditions* were associated with lower scores for *Environmental View*, and *visa versa*. The single * sign indicates the relationship was statistically rated as 'significant', at a probability value greater than 0.05 on an assumed two tailed distribution, meaning the likelihood of it being a chance, erroneous result was no more than 5%.

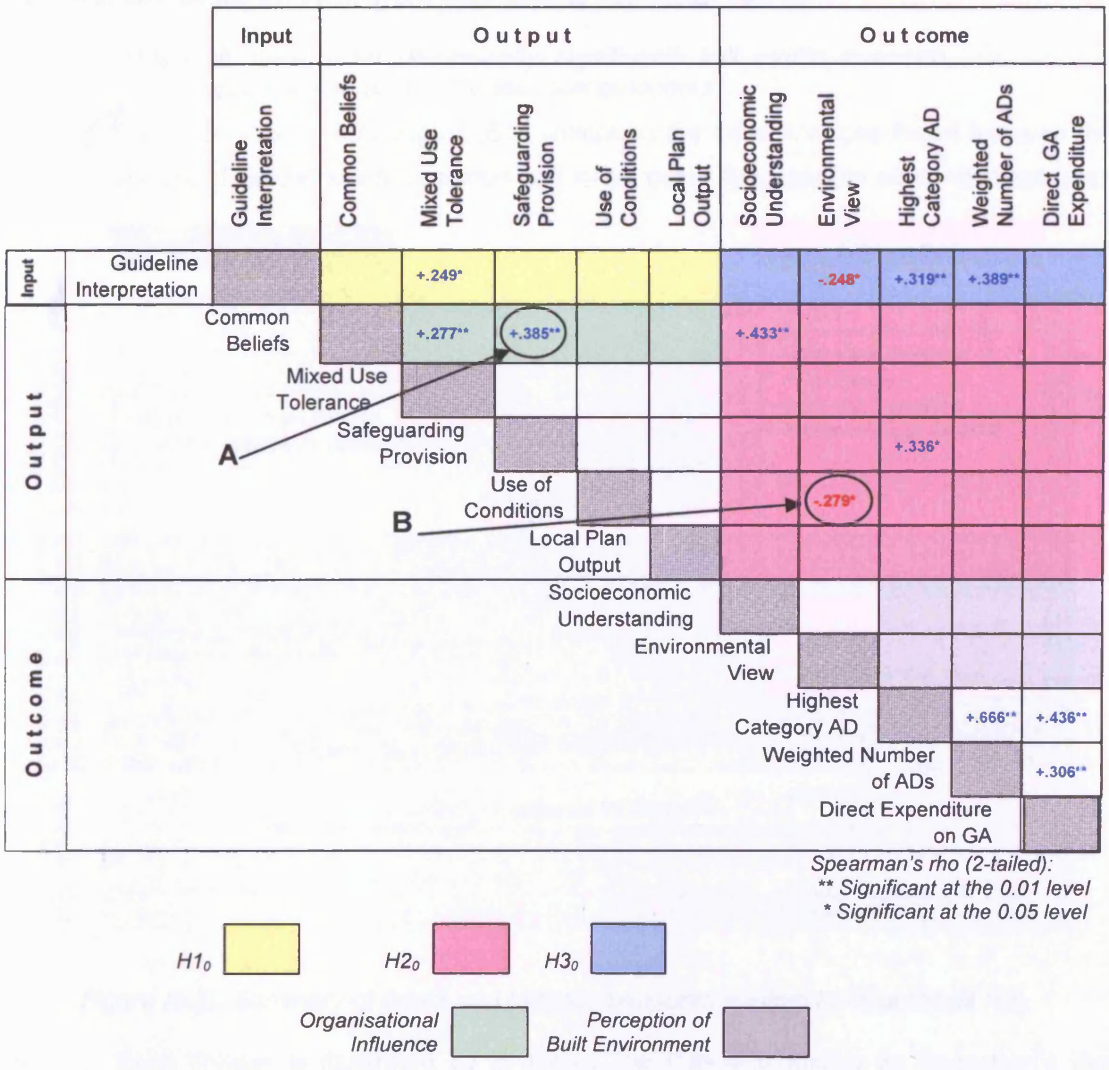


Figure (6.1): Spearman's rho correlations found between measures

Given they are immaterial to the hypotheses, three of the twelve correlations indicated by Figure (6.1) need not be further discussed, except to note that these three correlations, between the measures *Weighted Number*, *Highest Category* and *Direct Expenditure*, were amongst the most significant ones found. The strength of their statistical correlations served to triangulate the findings of both the categorisation process and the direct expenditure calculation, as each was based on a different dataset. In order to present the nine remaining correlations in a logical sequence, the following will describe each in relation to the three hypotheses and the IOO sequence used within the framework illustrated by Figure (4.7). It will start with those that link the input with outcomes, before discussing the two constituent stages, guidelines and planning outputs, then planning outputs and outcomes. In each case a modified version of Figure (4.7) will be used to highlight the significant relationships found.

Guidelines and Outcomes

The relationship between the guidelines specific to GA, which were taken as the input for local authorities, and planning outcomes, or the end effects on the built environment, was described by the third null hypothesis defined in Chapter Two as:

> *$H3_0$ = A reasonable (statistically significant) link exists between government guidelines and local outcomes.*

Based on Figure (4.7), Figure (6.2) illustrates the three linkages found between the indirect measure of *Guideline Interpretation* and three, out of five possible outcome measures.

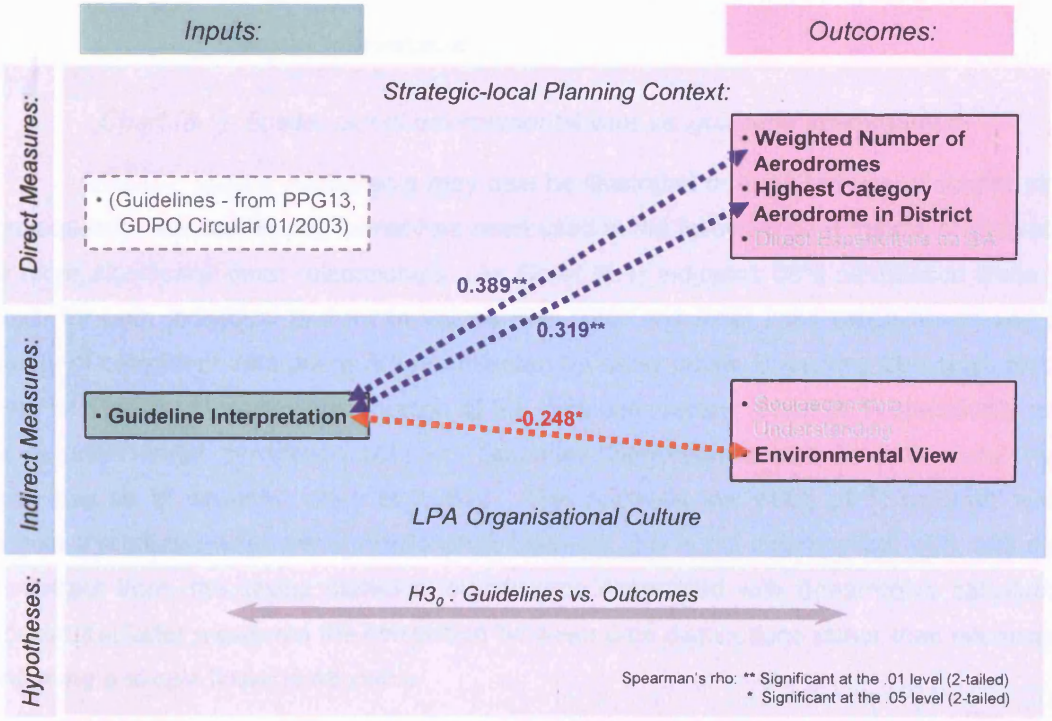


Figure (6.2): Summary of direct and indirect measures relative to Hypothesis $H3_0$.

Each linkage is illustrated by a dotted line that also shows its Spearman's rho correlation value and is colour coded blue for a positive relationship or red for a negative one. As such, Figure (6.2) might appear at first to satisfy the hypothesis, as several statistical links

existed between the input, *Guideline Interpretation* and outcome measures, *Highest Category Aerodrome in the District* or *Weighted Number of Aerodromes* and *Environmental View*. However, on closer inspection Figure (6.2) reveals at least one problem with such a conclusion; the Spearman's rho correlation between *Guideline Interpretation* and *Environmental View* was negative, with a value of -0.248 at a 0.05 level of significance. It shows that contrary to the LPA framework the environmental views of respondents acted against the guidelines rather than supporting them.

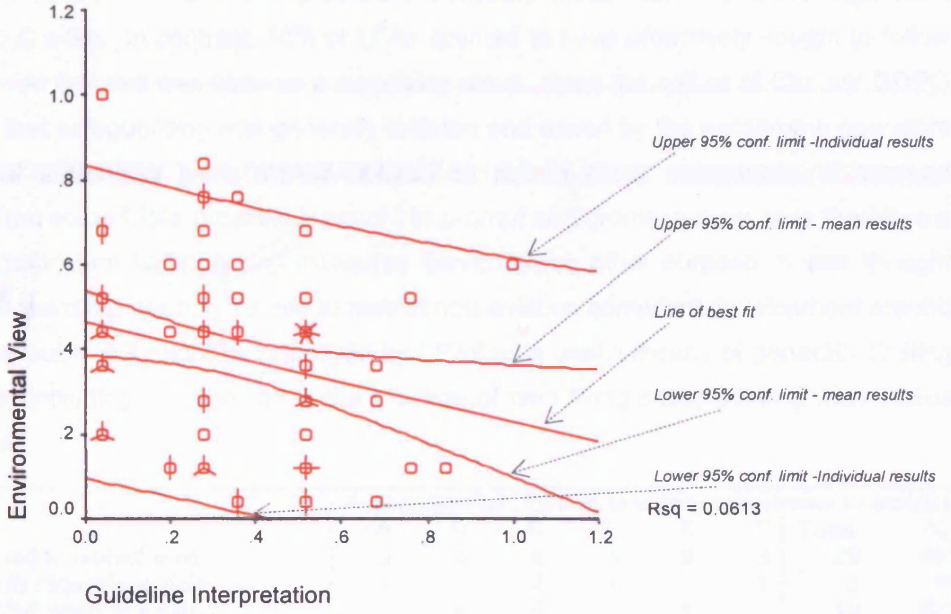


Chart (6.1): Scatter plot of environmental view vs. guideline interpretation

Visually, such a relationship may also be illustrated through the use of scatter plots. Consequently, the scatter plot format has been used in the following as a means of illustrating the more significant linear relationships. As Chart (6.1) indicates 95% confidence limits are shown for both individual and mean values (the outer and inner lines respectively) and the number of coincident data points are represented by 'daisy petals' branching from each plot, to neatly provide a physical representation of the data distribution. Chart (6.1) specifically plots the negative linear correlation between *Guideline Interpretation* and *Environmental View*, which has an 'R squared' value of 0.0613. This relatively low value of 'R squared' would suggest a relatively weak linear relationship, however, this is not incompatible with, and does not detract from, the strong statistical significance associated with Spearman's calculation, because the latter measures the correlation between data distributions rather than necessarily confirming a simple linear relationship.

Offsetting this negative relationship, stronger positive relationships were found when comparing *Guideline Interpretation* with either the direct measures of *Highest Category Aerodrome in the District*, or *Weighted Number of Aerodromes*. As mentioned previously, the measure *Guideline Interpretation* was based on the average score from three related questions in the survey. The first related to GDPO circular 01/2003 which concerned the

safeguarding of flying sites, including disused ones. Respondents selected an option which best described their LPA's approach to safeguarding.

Table (6.9) summarises the results which, like the other two questions, was tabulated against the measure *Highest Category Aerodrome in the District*, and clearly shows a tendency to vary according to the relative size and development of aerodromes involved. Overall only 42% had adopted some safeguarding measures. Perhaps, even more significantly for those involved in GA, nearly half of all authorities had never been asked by aerodrome operators to make any provision, including those with the more significant Category A to C sites. In contrast, 10% of LPAs claimed to have proactively sought to follow the guideline. At first this was seen as a surprising result, since the nature of Circular GDPO 01/2003 was that safeguarding was generally initiated and driven by the aerodrome operators and that local authorities were merely obliged to put in place safeguards, if deemed reasonable. That some LPAs proactively sought to prompt aerodrome owners, was therefore a possible indication that safeguarding measures served some other purpose. It was thought likely that safeguarding, not only served to restrict non-aviation compliant development around an aerodrome, but that it might be employed by LPAs as a useful means of generally limiting developments (including in some cases the creation of new flying sites) within a wide radius around the site.

	Authorities by highest category aerodrome in district							
	A	B	C	D	E	F	Total	%
Never been asked to protect sites	3	4	6	4	9	3	29	49%
Not accepted any requests to date	1		2	1		1	5	8%
Have safeguarded when requested	9	4	5		1		19	32%
Safeguarded & prompt owners to apply	3	2	1				6	10%
	16	**10**	**14**	**5**	**10**	**4**	**59**	**100%**
					Don't Know		*9*	
					Missing		*14*	
% that have at least safeguarded	**75%**	**60%**	**43%**	**0%**	**10%**	**0%**		

Table (6.9): Interpretation of government advice - safeguarding

	Authorities by highest category aerodrome in district							
	A	B	C	D	E	F	Total	%
Can have a negative impact	1	1	1				3	5%
Little or no positive impact	3	1	2	2	7	2	17	26%
Some positive impact	8	8	18		4	3	41	62%
A significant positive impact	4			1			5	8%
	16	**10**	**21**	**3**	**11**	**5**	**66**	**100%**
					Don't Know		*3*	
					Missing		*13*	
% that at least saw some positive impact	**75%**	**80%**	**86%**	**33%**	**36%**	**60%**		

Table (6.10): Interpretation of government advice – the role of GA

The second guidance question related to the direction given by PPG13 that local authorities should, consider "*the role of small airports and airfields in serving local business, recreational and emergency service needs*". Respondents were asked how much impact they felt GA had on business and recreation. Table (6.10) shows that a majority of over two thirds felt it had at least some positive impact. The third guidance question also referred to PPG13 and its request that local authorities "*take account of the economic, environmental and social impacts of GA*". Table (6.11) shows which statement best reflected their authority's attitude

towards balancing environmental/socioeconomic issues. Despite a significant 21% favouring the socioeconomic side, two thirds felt they considered both sides but favoured the environment over socioeconomic issues.

	Authorities by highest category aerodrome in district							
	A	B	C	D	E	F	Total	%
Has a focus on environment issues			2	1	1		4	8%
Considers both but favours environment	9	6	7	3	7	3	35	66%
Considers both but favours socio-econ.	6	2	2		1		11	21%
Has a focus on socioeconomic			3				3	6%
	15	**8**	**14**	**4**	**9**	**3**	**53**	**100%**
					Don't Know		*16*	
					Missing		*13*	
% that at least favour socioeconomic	**40%**	**25%**	**36%**	**0%**	**11%**	**0%**		

Table (6.11): Interpretation of government advice – environment vs. socioeconomic

The three sets of results, taken together, provided the strong correlation with aerodrome category as noted by Figure (6.2). They suggest that planners interpreted the guidelines in a positive way towards their local GA sites; they believed larger sites should be safeguarded and that GA could have an important socioeconomic impact. At the same time, Table (6.11) highlighted that two thirds of LPAs favoured the environment over socioeconomic issues, pointing towards a possible explanation for Chart (6.1) and the negative correlation between the *Guideline Interpretation* and *Environmental View* results.

In summary, a conclusion drawn from the relationships found between guideline input and planning outcomes was that the three relationships shown by Figure (6.2) suggested planners interpreted the GA guidelines in a constructive way, but underlying their responses was a significant concern for the environmental impacts of GA, which outweighed their appreciation of any socioeconomic benefits. It was also clear from Figure (6.2) that there appeared to be no vertical relationship between the indirect outcome measures and the direct ones. This might suggest that planners' perception of the built environment was not related to GA aerodromes in their district, meaning their understanding of GA was not necessarily formed by an interaction with aerodromes in their district. It was possible, for example that their views of GA were formed by their experiences at national or regional airports, or by media comment regarding civil aviation. On balance, it was felt the 'statistically significant' link required by Hypothesis $H3_0$, between government guidelines and local outcomes, was questionable and would need to be considered in the light of the following analysis of its two constituent stages in the IOO sequence; guidelines and planning outputs, then planning outputs and outcomes.

Guidelines and planning output

In Chapter Three, this stage of the input-output-outcome sequence was seen to characterise the 'efficiency' of the process, whilst in Chapter Four, as shown by Figure (4.7), the relationship between the input measure of *Guideline Interpretation* and the five planning output measures was the basis of the first hypothesis, as identified in Chapter Two:

$H1_0$ = *Despite strong local concerns, local authorities tend to accept government guidelines addressing wider public interest needs and approve strategic infrastructure development.*

As shown by Figure (6.3), out of ten possible correlations, only three associations were found between the input and output measures. Each was positive and two, between *Common Beliefs* and *Mixed Use Tolerance* and *Safeguarding Provision*, were at the 0.01 level of significance. In the context of the LPA survey relative to GA, Hypothesis $H1_0$ implies that LPAs accept government guidelines supporting GA and then use their powers to act upon the advice. The hypothesis suggests those believing sites should be safeguarded and that GA had positive socioeconomic impacts would be more likely to be supportive of GA; for example, allowing mixed uses that helped the financial viability of sites and resisting pressures to restrict flying.

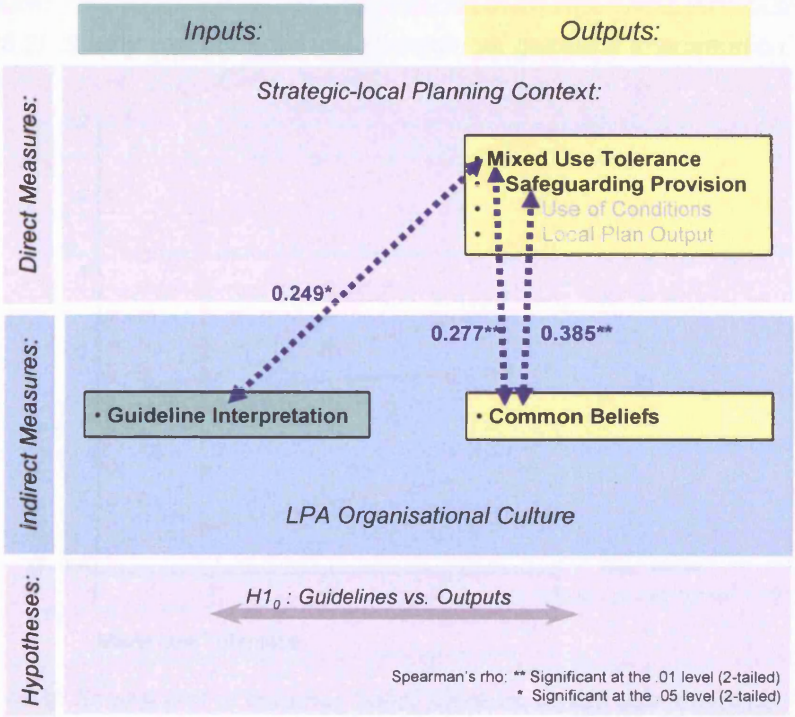


Figure (6.3): Summary of direct and indirect measures relative to Hypothesis $H1_0$.

The statistical relationship found between *Guideline Interpretation* and *Mixed Use Tolerance*, as shown by the scatter plot Chart (6.2), would seem to typify such a relationship. It suggests those LPAs with a high score in terms of accepting the guidelines, also allowed more mixed uses at aerodromes. Equally, the relationships between *Common Beliefs* and *Safeguarding Provision* and *Mixed Use Tolerance* would also appear to support the hypothesis. Chart (6.3) illustrates the scatter plot for the latter. All three relationships might suggest that a more positive view of GA, as expressed through the measures *Common Beliefs* and *Guideline Interpretation*, was associated with increased levels of mixed use and safeguarding.

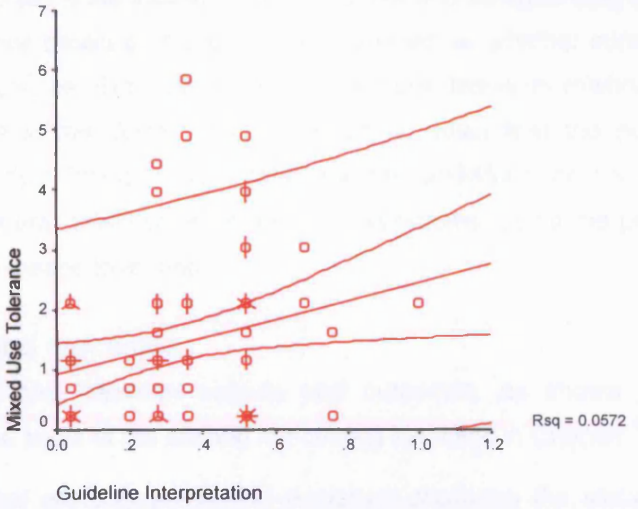


Chart (6.2): Scatter plot of mixed use tolerance vs. guideline interpretation.

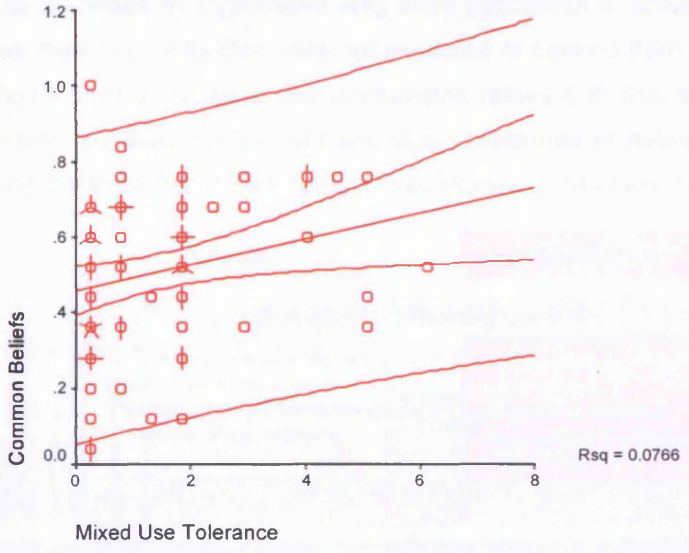


Chart (6.3): Scatter plot of common belief score vs. mixed use tolerance

However, offsetting the three relationships that supported the Hypothesis $H1_0$, Figure (6.2) also highlights that no relationships were found between *Common Beliefs* and the two other direct planning output measures, *Use of Conditions* and *Local Plan Output*, or more significantly between *Guideline Interpretation* and *Common Beliefs*. The latter relationship was felt to be critical to any understanding of causal relationships, since without it, the vertical relationships in Figure (6.2) could be a result of planning outputs influencing respondents' beliefs rather than their beliefs being influenced by the guidelines.

In summary, the linkages between guideline input and planning outputs, as shown by Figure (6.3) were limited and therefore, in terms of supporting Hypothesis $H1_0$, raised questions about the ability of guidelines to shape planning outputs and help implement government strategy. The evidence that local authorities accepted wider public interest needs in the face of strong local concerns was weak. This view was particularly formed because no relationship was found between *Guideline Interpretation* and *Common Beliefs*. In its absence,

it was not possible to say if the incidence of mixed use and safeguarding measures reflected the LPA's policy stance based on the guidelines received, or whether some other factor was involved. For example, as discussed earlier, when considering its relationship with *Highest Category Aerodrome in the District*, there was some doubt that the positive correlations concerning *Safeguarding Provision* were related to the guidelines, or the wider benefits to a LPA of restricting general development around an aerodrome, using the provisions of GDPO circular 01/2003 as a means to an end.

Planning output and outcomes

The relationship between outputs and outcomes, as shown by Figure (4.7) in Chapter Four, was the basis of the second hypothesis identified in Chapter Two.

> $H2_0$ = *Local authority plans and decisions challenge the status quo and succeed in driving development needed for strategic purposes.*

The implication, relative to GA, was that LPAs which accept guidelines and attempt to act upon them, as described by Hypothesis $H1_0$, were successful in achieving the aims of the guidelines, rather than outcomes that were not expected or desired from the strategy. As may be seen in Figure (6.4) there were five correlations relevant to this stage of the IOO sequence, two of which, between the indirect and direct measures of outputs, have already been outlined; leaving the three that linked outputs to outcomes to be discussed.

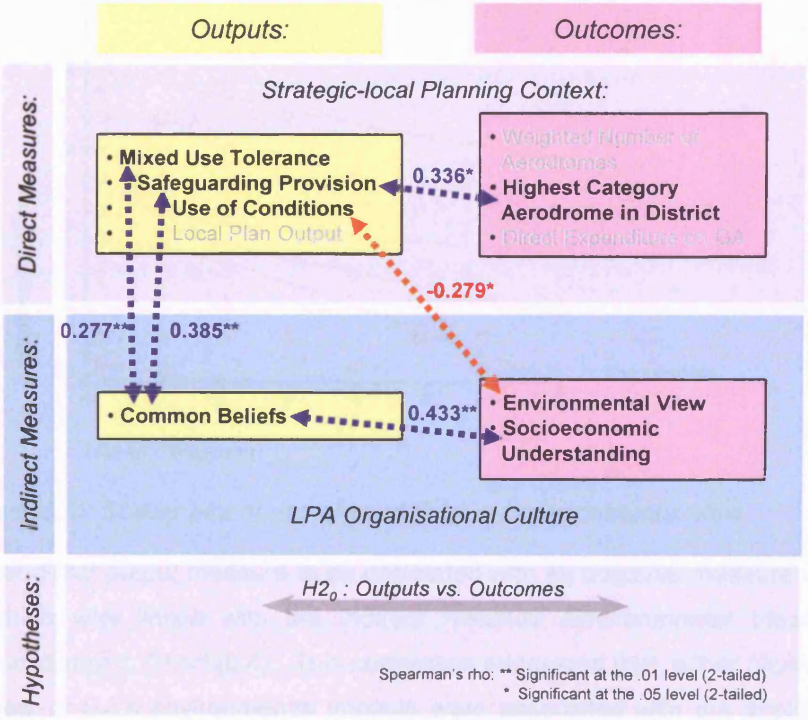


Figure (6.4): Summary of direct and indirect correlations relative to Hypothesis $H2_0$.

The positive relationship between *Safeguarding Provision* with *Highest Category Aerodrome in the District* is illustrated by Table (6.12). It shows the frequency and types of safeguarding provided by LPAs in the survey whilst also highlighting the percentage of sites with safeguarding in place, and the extent this reflected the category of site involved. As

mentioned previously, however, the nature of Circular GDPO 01/2003 was that safeguarding was generally initiated and driven by the aerodrome operators. As such it was felt, that as the only 'horizontal' relationship established between outputs and outcomes, it probably said more about the initiatives taken by aerodrome operators to secure their sites, or the wider usefulness of the guidelines to LPAs, than the proactive behaviour of planners to safeguard flying activities according to the spirit of the GDPO circular.

	Aerodromes by category							
	A	B	C	D	E	F	Total	%
Nearby tall structures	10	6	9	4	4	2	35	31%
Encroachment by housing	9	2	1	1	1		14	12%
New/changed roads	6	1	1		1		9	8%
Risk of bird strikes	9	2	2		1		9	8%
Impact on radar/navigation	9	2	2	1	1		15	13%
Other flying sites	4	1	1		1		7	6%
Other developments	10	2	7	1	4		24	21%
	57	**16**	**23**	**7**	**13**	**2**	**113**	**100%**
No. Sites with Safeguarding	14	6	13	4	4	2	43	
% of total sites	82%	50%	39%	21%	17%	15%	36%	
Safeguard measures per site	**4.1**	**2.7**	**1.8**	**1.8**	**3.3**	**1.0**	**2.6**	

Table (6.12): Safeguarding provision - types of safeguards adopted

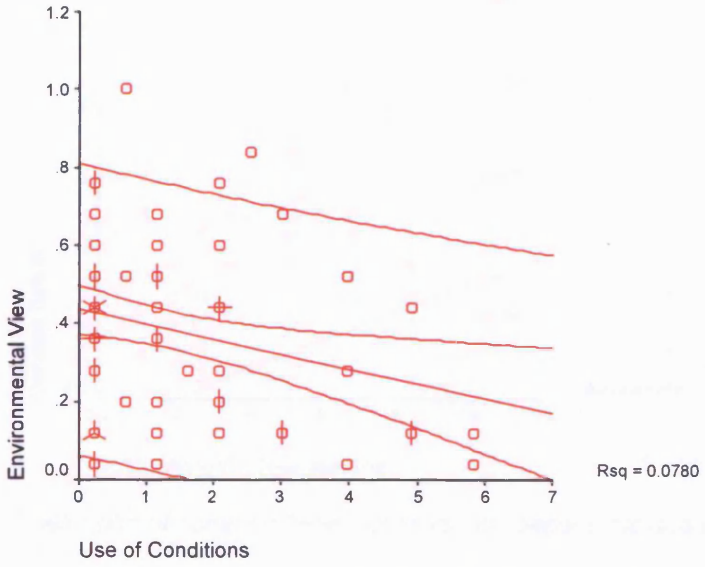


Chart (6.4): Scatter plot of use of conditions vs. environmental view

The other direct output measure to be correlated with an outcome measure was *Use of Conditions*, which was linked with the indirect measure *Environmental View* and is illustrated by the scatter plot, Chart (6.4). This correlation suggested that, either planners with a less positive view of GA's environmental impacts were associated with the application of more conditions of use, or those authorities where GA presented clear environmental issues were more likely to use conditions in an attempt to regulate flying. In either case, it supported a link between the physical use of conditions to control flying, and the views held by planners about the environmental impact of aviation.

The third correlation found between output and outcome measures was that between *Common Beliefs* and *Socioeconomic Understanding*, where the Spearman's rho value was found to be high at 0.433, at a 0.01 level of significance. Chart (6.5) illustrates the linear relationship with a scatter chart based on an equally high 'R Squared' value of 0.1877; indeed the strongest linear relationship found between any two measures. The implication from this particular relationship was that the attributes measured by questions aimed at assessing *Common Beliefs* were closely linked to the respondents' views towards the socioeconomic impact of GA. In other words, planners who felt positively towards GA in general also believed it possessed positive socioeconomic qualities, although it could not be said if one measure determined the other. Perhaps a more intriguing observation was that, given the similarity of methodology between the two indirect outcome measures, a similar relationship was not found between *Environmental View* and *Common Beliefs*. This may have been due to an offsetting effect from the established negative relationships between *Environmental View*, *Guideline Interpretation* and *Use of Conditions* as illustrated previously by Chart (6.1) and Chart (6.4).

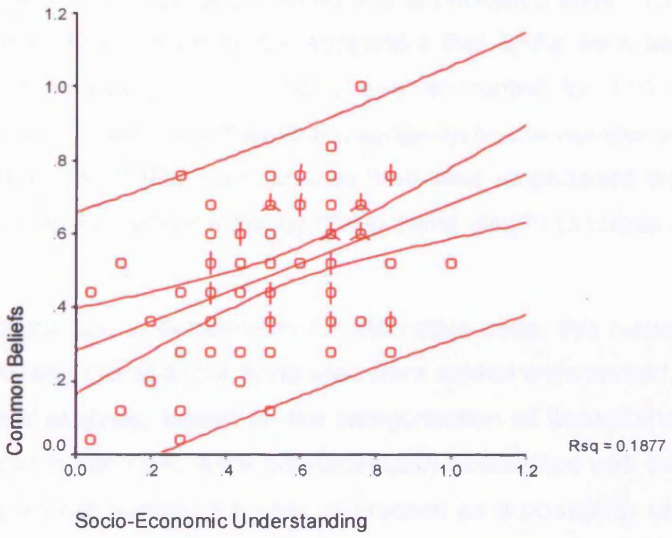


Chart (6.5): Scatter plot of common belief score vs. socioeconomic understanding.

In summary, although there were several relationships established between planning outputs and planning outcome measures, it could not be said they fully supported the null hypothesis $H2_0$. Firstly, doubts were expressed about the causal relationship between *Safeguarding Provision* and *Highest Category Aerodrome in the District*; since it might be expected that larger sites would initiate the safeguarding of their sites. Secondly, there was clearly a negative attitude towards the environmental impact of GA, which may have obscured the socioeconomic benefits. Finally, as mentioned earlier when discussing $H3_0$, there was no vertical relationship between the indirect outcome measures and the direct ones; suggesting that planners' understanding of GA was not formed by an interaction with aerodromes in their district and therefore could not influence planning outputs through their common beliefs.

6.5 Survey deductions and issues

This chapter has focused on Objectives Three and Four. It compared the questionnaire results of the LPA survey with those from the ESRC study, then reviewed the correlations found between measures developed to test the three hypotheses that emerged in Chapter Two. The following will draw together the various threads exposed, to reach some conclusions and raise issues for the next chapter.

Testing previous research

Whilst the original research proposal was based on a 'testing out' of previous research, as the foregoing chapters have described, the research ultimately followed its own path, adapting to the experiences of others and practical limitations, such that the 'testing out' elements became dispersed throughout the results. Despite this, it has been possible to draw some conclusions from a comparison between the two LPA surveys, in accordance with Objective Three.

It was found many local authorities appeared to be unaware of a significant level of GA activity within their boundaries, at published and unpublished sites. This finding perhaps ran counter to the impression given by GA supporters that LPAs were sensitive to any GA activity, except that the missing sites probably only accounted for 11% of all movements nationally. Even so, the concern was that by not appreciating the number of sites unknown to LPAs (and researchers), the ESRC research may have over emphasised the level of planning intervention in flying matters, for example, by giving equal weight to issues at small and large sites alike.

In terms of the use of aerodromes for alternative uses, this research confirmed the ESRC results that mixed uses at active flying sites were indeed wide spread, but not universal. Through an additional analysis, based on the categorisation of aerodromes, this study was then able to show that mixed uses were not necessarily associated with the category of site. As such this finding did not support the view, expressed as a possibility earlier, that either a more relaxed approach to mixed use permissions by local authorities enabled some sites to prosper or that a restrictive approach limited flying activity.

A similar conclusion was drawn from the analysis of conditions to regulate flying activity. This research broadly confirmed the ESRC findings, but by categorising aerodromes and applying GIS techniques to verify LPA responses, it additionally demonstrated that a wide range of measures were used without any clear relationship to the size of site. This also seemingly overturned any preconceived idea that LPAs would have less need to regulate smaller sites than larger ones. Yet, at the same time, the fact that there were sites not known to LPAs, and so not subject to planning conditions, suggested many small sites did not need regulation. If so, the implication was that those with conditions may have either created real issues for their local authorities, or been subjected to an inconsistent pattern of regulation.

Evidence that mixed uses and conditions were to be found at sites irrespective of their category, reinforced the possibility that issues found by the ESRC team may have been

over emphasised if they failed to discount the relative importance of sites, particularly as it had not been appreciated that many sites were unknown to local planners. As will be seen in Chapter Seven, this was a point that was carried forward to the field visit phase.

Understanding effectiveness

The chapter reviewed the correlations found between four indirect and seven direct measures, which had been developed from the original ESRC questionnaire to test the three hypotheses aimed at understanding strategic-local tensions, in line with the research question refined in Chapter Two.

Figure (4.8) in Chapter Four highlighted forty-five relationships, which had the potential to support the null hypotheses. In this chapter the focus has been on only nine of these forty-five, as summarised by Figure (6.5), since these were found to be the only statistically significant relationships revealed by the survey. In short, only fragmented relationships were found, and even collectively they appeared to only weakly support the null hypothesis, particularly as two of them were negative.

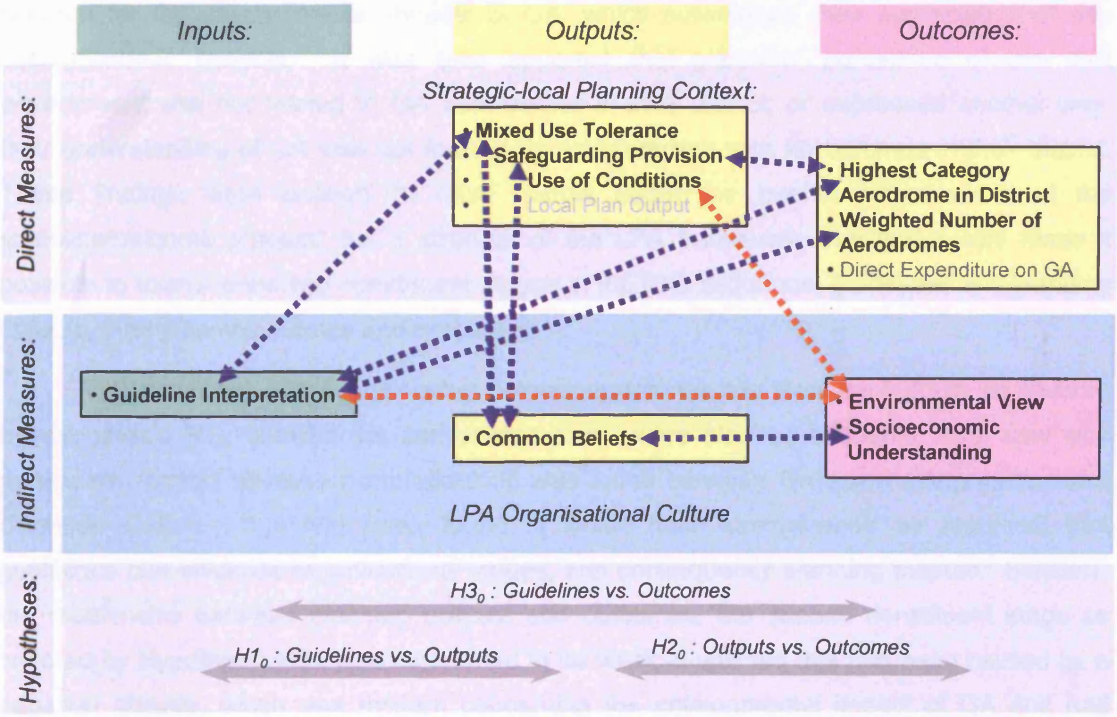


Figure (6.5): Summary of nine direct and indirect correlations identified by the LPA survey

This low level of correlation raised doubts about the null hypotheses, but it also questioned the planning framework which had been developed in previous chapters and the ability of the questionnaire to probe the linkages suggested. Although the measures had been chosen as a practical means of calibrating the planning framework, it became clear from the range of responses this was more difficult than originally envisaged. This was felt to be a function of fractional sampling, where the sample size was reduced for those measures with fractional responses. For example, a third of sites had neither permanent nor temporary non-flying uses, less than half made any specific comment about aerodromes in their local plans

and only a half appeared subject to planning conditions. Equally, the numerical approach of simply counting the number of conditions, permanent and temporary non-aviation uses may have missed the nuances, as it said nothing about the quality or impacts of the judgements involved. This was most pronounced with the measure *Local Plan Output*, where opposing actions of restricting and expanding flying activity resulted in neutral data, which could not be linked to any other measure. However, as discussed in Chapter Three, others including Gilg (2005: 154), Kingdom (2006: 461), Hogwood and Gunn (1984), Cullingworth and Nadin (2006: 8), had raised evaluation issues about assessing planning's effectiveness, so a mixed result was not unexpected. It was also apparent that despite the fragmentation of results and possible flaws in the methodology, a set of themes had emerged from the relationships that were statistically significant and coherent.

The foregoing examined the statistically significant relationships with respect to the three hypotheses and the IOO sequence used within the framework illustrated by Figure (4.7). In terms of the relationship covered by Hypothesis $H3_0$, it was found that planners interpreted the GA guidelines in a constructive way, but underlying their responses was a significant concern for the environmental impacts of GA, which outweighed their appreciation of any socioeconomic benefits. It was also apparent that planners' perception of the built environment was not related to GA aerodromes in their district; or expressed another way, their understanding of GA was not formed by an interaction with aerodromes in their district. These findings were enough to raise doubts about the overall effectiveness of the guideline/outcome process, but a strength of the LPA framework was that it also made it possible to examine the two constituent stages in the IOO sequence; guidelines and planning outputs, then planning outputs and outcomes.

Examination of the relationship between guidelines and planning outputs, as covered by Hypothesis $H1_0$, showed the correlations found were also questionable. This view was particularly formed because no relationship was found between *Guideline Interpretation* and *Common Beliefs*. If it had been found, it would have strengthened an argument that guidelines can influence organisational values, and consequently planning outputs. Similarly, the relationship between planning outputs and outcomes, the second constituent stage as covered by Hypothesis $H2_0$, was also found to be weak. It was felt this had been caused by a negative attitude, which was evident concerning the environmental impact of GA and had obscured the socioeconomic benefits. When coupled to the earlier observation that planners' perception of the built environment was not related to GA aerodromes in their district, this implied the outward signs of planning's intervention, in terms of planning conditions, safeguarding etc., may not have been reflections of the guidelines, but the result of other factors.

This led to a conclusion, that since guidelines were not linked to organisational values, and views about GA's socioeconomic and environmental impacts were not related to the local situation, then planners' decisions were based on less direct influences. The implication was that decisions were made, for example, on the basis of conflicting policies

(such as environmental, development and transport policies) or local political pressures, each of which were recognised as possible pressures in the wider socio-economic-political environment in Chapter Three. As such, it was felt the survey provided grounds to question the effectiveness of guidelines, at least about GA, to overcome other policy and political pressures and achieve an improvement in the local situation, in line with strategic objectives.

Gaining a closer insight?

This chapter has concentrated upon Objective Three and Objective Four, concerning the earlier ESRC research, and strategic-local tensions evident between planners and the implementation of government guidelines. In doing so, it confirmed the need for a substantive understanding of a case study subject prior to direct investigation, as the findings from Chapter Five, concerning aerodrome categories and the number of sites involved, were significant in interpreting the response rates and results of the survey. They consequently raised a question about the emphasis placed by the earlier research on planning's intervention in flying matters; and a point that will be revisited in the following chapter.

Although significant linkages were found, as predicted by the LPA framework developed in Chapter Three, others were not evident, notably the associations between *guidelines* vs. *organisational beliefs*, and the *built environment* vs. *planner's perception of the built environment*. Whilst this provoked some methodological doubts about the ability of a postal questionnaire to probe the relationships, in other respects there appeared to be several consistent themes evident in the responses. Consequently, it can be said the survey both cast doubt on the effectiveness of central guidelines to overcome local pressures on specific issues and pointed other areas to be more fully explored during the field visits.

Although others had commented upon difficulties of evaluating planning effectiveness, as discussed in Chapter Three, it was felt that using the approach taken in this research, to disaggregate the LPA framework into horizontal and vertical linkages that acted directly and indirectly, it had been possible to gain a closer insight of the relationships that contributed to the planning process. In doing so, it prepared the way for the field study visits that followed, the results of which are discussed in the following chapter.

CHAPTER SEVEN: FIELD VISIT FINDINGS

This chapter reviews observations from thirty-one field visits to aerodromes and LPAs relative to the findings of previous chapters, particularly the LPA survey. Examples of local authority support towards strategic objectives are described and then the extent to which planning understands GA issues is discussed. Process gaps are illustrated by instances of strategic-local tension, before specific conclusions are drawn about the treatment of GA and broader points developed regarding planning issues beyond the specifics of aviation.

7.1 Issues arising

This chapter concerns the field visits to twenty-six aerodromes and five local authorities, which were conducted during 2005. The purpose of these field visits, discussed in Chapter Four, was to form part of a multi-method study that would help triangulate survey findings, illustrate in greater depth those findings and, most importantly, elucidate through complementary enquires the underlying processes involved, so gaining a greater understanding of the issues involved (Yin, 2003; 150). As such, this chapter will draw upon the knowledge accrued over the preceding chapters, illuminating it with case study observations, to reach some specific conclusions about GA related issues and identify several wider planning issues related to strategic-local tensions, in line with Objectives Three and Four and in connection with the research questions posed by this thesis in Chapters One and Two.

In Chapter Six, the results of the LPA survey were described. They ultimately questioned the effectiveness of national and regional strategic guidelines to overcome local pressures on specific issues. Significantly, it was noted that two associations, which had been theorised within the earlier simplified planning framework, were not evident from the empirical data. These were the linkages between *guidelines* vs. *organisational beliefs*, and the *built environment* vs. *planner's perception of the built environment*.

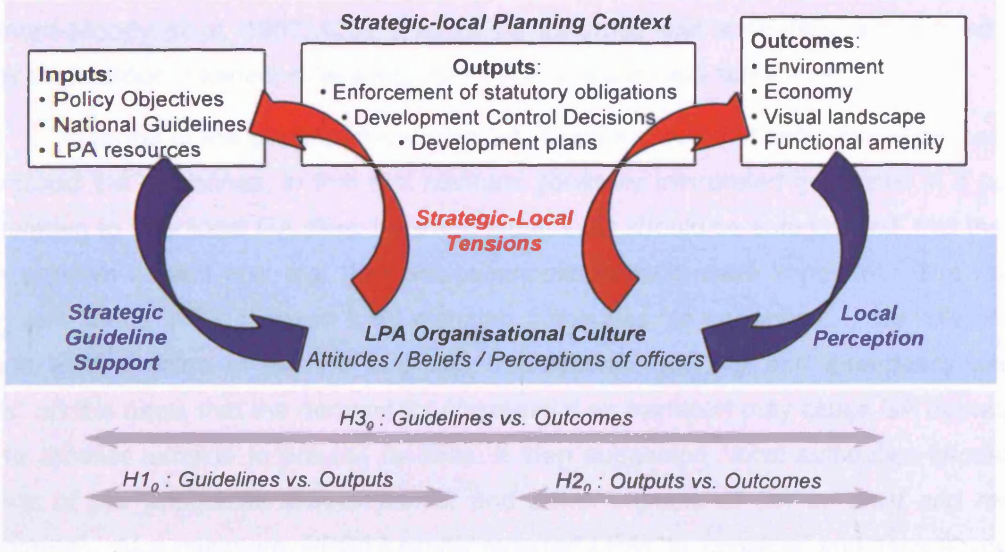


Figure (7.1): Key areas leading to strategic-local tensions as identified by the LPA survey

Whilst these associations were first postulated in Chapter Three, the LPA survey highlighted their importance, since it became apparent that without these connections between strategy and the reality of the built environment, significant strategic-local tensions might occur, between local people, local government and national government. Accordingly, Figure (7.1) encapsulates the empirical findings of the LPA survey in terms of the earlier simplified planning framework, as developed in Chapter Three. It is intended to illustrate and reinforce the point that inputs from government, whether national or regional, may not necessarily be completely supported by an LPA, and that the LPA may not necessarily have a balanced perception of the issues and needs facing the local built environment. Consequently, together or independently, gaps in the linkages between national government input, LPA output and local outcomes (affecting local people) are implied to be a cause of strategic-local tensions; through inadequate or inappropriate plans and decisions.

The following will attempt to triangulate, illustrate and elucidate the three key areas shown in Figure (7.1), *strategic guideline support*, *local perception* and *strategic-local tensions*. Each will be discussed in turn, using material mainly gathered during the field visits, to arrive at both specific conclusions about GA and the identification of wider planning issues, which the next and final chapter will consider.

7.2 Supporting strategic guidelines

One of the two significant linkages in the planning process highlighted by the LPA survey in Chapter Six was the degree that local authorities might support particular strategic guidelines. In Figure (7.1), this has depicted as a blue arrow, on the left hand side of the process. The term 'support' has been carefully chosen to describe a process where a statutory guideline is published by the national government in the expectation that local governments will agree to act on the direction it provides and in the spirit of its meaning. Given Chapter Three defined strategic goals as "*units of information that are understood by organizational members to define preferred collective outcomes at a specific moment in time*" (Maynard-Moody *et al*, 1987: 126), it might be assumed that a strategy would need to be clearly understood, needed, relevant to the LPA in question and actionable.

In terms of the guidelines covering GA, Chapter Six found some evidence that LPAs understood the guidelines, in that that planners generally interpreted guidelines in a positive way relative to their local GA sites; believing larger sites should be safeguarded, that they had some positive impact and that their socioeconomic impacts were important. The relevant paragraph within PPG13 asked local planning authorities "*to consider [...] the role of small airports and airfields in serving business, recreational, training and emergency services needs*" on the basis that the demand for commercial air transport may cause GA operators to look to smaller airfields to provide facilities. It then suggested "*local authorities should take account of the economic, environmental, and social impacts of GA on local and regional economies*". At a minimum, PPG13 simply required LPAs to 'consider' and 'take account' of the issues. Issues to be explored during the field visits were therefore, did LPAs have clear strategies concerning GA and to what extent did LPAs support the wider objective expressed

by PPG13 - to anticipate the need for additional facilities at smaller aerodromes given the displacement of GA from regional airports and to allow appropriate local development?

Chapter Four described how a total of twenty-six aerodromes and five local authorities were visited, where the aerodromes were selected by a 'snowball' process that explored the connectivity of sites, and local authorities were selected to explore particular local circumstances. Discussions with local aerodrome operators prior to each visit helped to understand local dynamics and form a view of the LPA's support for GA, which could be explored during any subsequent LPA visit. The five local planning authorities visited were; Cherwell, Tewkesbury, Salford, South Cambridgeshire and Cambridge City. Each had been selected in order to explore a particular aspect of local authority control over local flying sites and the way this affected their support for these sites. During the interviews, planning officers were encouraged to describe their council's view of local aerodromes. Of the five LPAs visited, Salford, South Cambridgeshire and Cambridge City best illustrated the range of strategic support provided, and will be reviewed in the following, leaving Cherwell and Tewkesbury to illustrate other aspects of local authority control in subsequent sections.

Barton aerodrome and Salford City

Barton aerodrome, a Category B site located at the south east corner of Manchester within the Unitary District of Salford City, was known to be one of the most active GA sites in the country. The secondary investigations discussed in Chapter Five, had also revealed that Manchester, unlike London, possessed no other similar 'satellite' sites, causing Barton to be relatively isolated from other comparable sized GA sites. It was also known that Barton had been the subject of speculation about its future, and that the local council had been supportive of its continued operation. During the visit, it was explained by the aerodrome managers, that the site had originally been wholly owned by Manchester City Council and operated by Lancashire Light Planes Limited in the interests of Barton Aero Club members. Two years ago a limited company, Manchester Ship Canal Developments, was formed by the council in partnership with Peel Holdings plc with equity split on a 49/51 basis, meaning Peel Holdings had the controlling interest. Peel has multiple business interests that include operating Liverpool, Doncaster (Robin Hood) and Sheffield airports. The lease for Barton Aero Club had recently expired and because it was not automatically renewed, there was press speculation of closure and non-aviation development. After negotiations, and assurances to both the club and the local council that it would remain an airport, the aero club lease was re-established, although Peel now operated the site through a new company, Barton Aerodrome Operations Limited, as its agent. It was said Peel's long term strategy is to develop the site as a small airport, to serve Manchester and Salford, and ultimately commercial activities would be introduced and extended. Before the involvement of Peel, Manchester City Council was not seen as very proactive and it was said a degree of friction existed between the two councils regarding the site. However, this had since been resolved by the joint venture with Peel Holdings. The local planning authority, Salford City, was described by Barton aerodrome management to be very supportive of the site. Salford had taken active measures to

safeguard the site. There was a positive statement in its Unitary District Plan and councillors attended the aerodrome's consultative committee meetings. There were no formal conditions of use applied by the local authority, since the site predated planning regulations, but there were self imposed conditions on the times of operations, restricting flying between 9:00 and sunset and controlling circuit patterns. This was aimed at minimising noise complaints, which at peak times could rise to about three to four a week. In general, the Club considered it has been very strict about procedures in order to avoid issues with residents and the two councils involved. Two examples of the support provided by Salford were given. Firstly, it had helped protect the clubhouse from redevelopment by Peel, and secondly it had required the development drawings for the proposed Salford Stadium to be reoriented to avoid conflict with the circuit pattern of the aerodrome. When asked how well the council understood GA, it was said the club had made regular attempts to explain their operations, but the council did not really understand GA, although they did appreciate the historical aspects of the site.

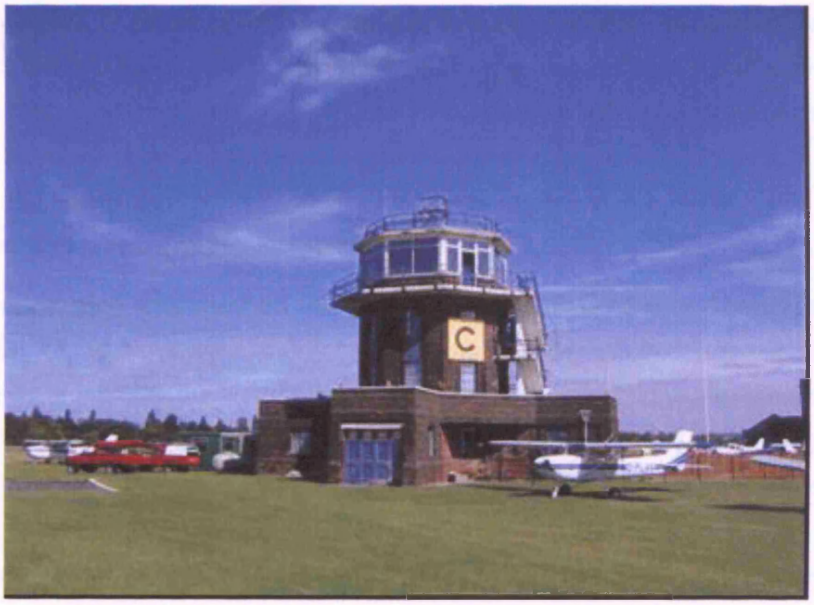


Plate (7.1): Barton aerodrome's historic control tower, Manchester (Maxwell, 2006).

Based on the visit to Barton aerodrome, the impression gained was that Salford City Council supported the aerodrome in line with PPG13; it believed such sites should be safeguarded, that they had some positive impact and their socioeconomic impacts were important. During the subsequent interview with a Salford City development officer, these points were reiterated and attention was drawn to Policy A14 which stated:

"*Barton Aerodrome will be safeguarded for General Aviation purposes. Development at or close to the aerodrome, which is incompatible with any existing or potential aviation operation, will not be permitted. Planning permission will be granted for development that would improve aviation facilities, provided this would not have an unacceptable impact on residential amenity and highway safety, and is otherwise compatible with other policies in the Unitary Development Plan.*"

The reasoned justification for the policy was:

"*Barton Aerodrome is an historic airfield that is also important to the local economy. In addition to supporting local businesses the aerodrome provides important training facilities, a base for emergency services and a recreational facility for both fliers and spectators. The City Council is therefore keen to see the aerodrome retained and improved as a local and regional resource. Positive consideration will also be given to development or redevelopment of the [...] frontage to the aerodrome [...] where this would support and complement the continued existence and improvement of the aerodrome for General Aviation purposes.*" (Salford Draft Unitary Development Plan, 2003 Chapter 11).

Clearly, the justification touched upon several key points in PPG13, however, other aspects of policy also emerged during the interview. For instance, Salford had a vision to turn the city into a green, garden city with tree-lined boulevards, riverside walkways and urban parks, and in this respect the open space provided by the aerodrome was highly valued. The unique historical position of Barton as Britain's first municipal airfield and its control tower, which was believed to be the oldest operating in Europe, was also recognised by the council. When asked how a balance was achieved between local and regional impacts, the view taken was that the onus was on the applicant to demonstrate any wider impacts were significant and in line with regional/national policies. If proven, these impacts would need to be carefully considered, especially if they might improve the economics of the North West yet have an impact on the environment of the immediate area.

A conclusion was reached following the visit to Salford City Council, that the LPA was supportive of the aerodrome, but not necessarily of GA in the wider sense. Its focus was on the qualities of the site, the history, green space and leisure it provided, but it was cautious of any development, including an expansion of GA activity. It did not view Barton as a part of a integrated network, in an area that was weak in similar sites and where the expansion of Manchester Airport might bring pressures to relocate displaced GA activities. In this sense, it did not entirely align itself with the intent of PPG13, as this national guideline potentially conflicted with other local policy objectives.

Events in Cambridgeshire

The 'snowball' selection of sites ultimately led to three flying sites in Cambridgeshire, Little Gransden, Bourn and Cambridge Airport. Prior to visiting these sites and their respective LPAs, South Cambridgeshire District Council and Cambridge City Council, it was known that both councils had faced significant opposition to their strategic policies from their electorate and the flying community alike, but for different reasons; South Cambridgeshire had responded to pressures from local residents concerning noisy aircraft and Cambridge City had sought to resolve its housing development issue by planning to move the city airport.

The situation for South Cambridgeshire reached a watershed in January 2002, when it proposed a controversial 'Small Airfields Policy' that was subsequently rejected by an inspector's report. The district's policy towards small airfields had been developed in response to a long and difficult planning inquiry in 1998 concerning an aerodrome known as

Little Gransden, a Category C site. It was said the site had grown from a farmer's strip established in 1966 to an aerodrome with hangarage for 70 aircraft by 1993. When the owners started to import and sell former Soviet Union military training aircraft, widely known as 'Yaks', the increase in noise levels caused local residents to complain and in 1992 the district council issued a Planning Contravention Notice. The owners responded with an application for lawful development based on ten year's continuous use. However, local residents formed the Cambridgeshire Airfields Action Group (CAAG), an enforcement notice was issued, and the stage was set for a full public inquiry in 1998. After 17 days, the Inspector reached a compromise when the aerodrome owners agreed to a maximum of 30 take-offs per day and the establishment of a consultative committee. Cognisant of the issues raised by this case, the District Council developed a highly detailed policy towards small aerodromes, which sought to control activity through an 'airfield management plan', which included limiting all sites in their district to 40 take-offs per day, restricting engine size, hours of operation and number of aircraft based at each site. This policy became a contested feature of their Local Plan which was subsequently addressed during a Public Inquiry in 2002. The Inspector referenced the sections of PPG13 quoted earlier, noted local objections and said he understood the District Council's belief that the policy provided "*a robust set of criteria for striking a fair balance [...] easily understood by potential developers and landowners, by local residents [...] and by those who have to apply the policies*". However, he concluded the policies were "*over-ambitious and unrealistic [...] seemingly based too much on the individual circumstances of a single appeal case [...] contained too much prescription and too little flexibility [...] this could give rise to a more lengthy and costly appeal process than if a neutral policy were to be adopted in the first place*". He went on to propose such a neutral policy, which set out to strike a balance between the different interests involved and using some of the phraseology of PPG13 concerning the economic, employment and emergency services benefits of GA, but without the reference to accommodating any dispersal of GA from larger sites. The inspector's proposal was subsequently adopted by the District Council.

During the interview with planners at South Cambridgeshire LPA, it was said the new policy had allowed the situation to settle and enabled a more balanced approach to GA. For example, the layout of the new settlement of Cambourne had taken into consideration the proximity to Bourn aerodrome (like Little Gransden, a Category C site) and appropriate changes had been made to protect both the village and Bourn's circuit patterns. Equally, the LPA's position regarding a proposal to close and then develop Cambridge airport, a nearby Category A site, was said to be neutral, even though it had planning responsibility for part of the site. The Council had not actively sought the relocation of the airport. Yet, despite its neutrality towards the proposed closure of Cambridge airport, South Cambridgeshire did acknowledge it had resisted a related proposal to move the airport to Duxford, the historic Imperial War Museum airfield which was firmly located within the district. A conclusion drawn from the South Cambridgeshire field visits was that local authorities may on occasions find pressure from local residents difficult to reconcile with otherwise legitimate activities, and that in the absence of a clear, practical policy, events may escalate to become both time and cost

consuming. Whilst the situation had been normalised by the Inspector, and PPG13 had proved useful in requesting LPAs to 'consider' and 'take account' of the socioeconomic benefits of GA, even he had not gone so far as to support the intent of PPG13, and recognise the need to accommodate the dispersal of GA activity from larger airports. South Cambridgeshire had a total of eight established sites within its jurisdiction but it chose not to intensify activity at these sites, even though it could facilitate the relocation of some of the light aircraft activity at Cambridge airport, whilst relieving pressure on housing development in the county. This echoed a point made earlier through the Salford case; LPAs were unlikely to adopt national guidelines that could conflict with other local policy objectives.

Subsequent visits to both Cambridge airport and its main planning authority, Cambridge City Council, confirmed this view. Cambridge airport (more commonly known as Marshall's, after the site operator, Marshall Aerospace) was clearly of significant economic importance to Cambridge City Council. Marshall's aviation activities were centred upon the maintenance of large civil aviation aircraft, which periodically needed to be landed and taxied to the workshops for repairs. The aerodrome's aero club and training facilities were incidental to this aerospace activity, but linked to some limited business and scheduled services, they provided a basis for the employment of ground staff needed to operate the air traffic control and safety systems. The issue was that Cambridge City has expanded mainly to the east and ultimately bordered the airport site, because urban expansion had been shaped by the university, which owns land and historic buildings to the west of the city. Due to the continued growth of Cambridge and the government's directive to build 200,000 new homes across East Anglia, planners suggested in 1998 that Marshall moved its aerospace operations to one of the Ministry of Defence airfields, which were due to be vacated in the Cambridge region. Although it had serious concerns over the suitability of the military sites suggested, the company was said to have agreed with this plan, as it felt the current site was uneconomic as an airport and it had been constrained from a significant expansion into scheduled services. The eventual choice of site had not been agreed, but Brian Human, Head of Planning Policy and Projects, Cambridge City Council, felt that ultimately Marshall would have to relocate despite its significant economic benefit, saying it was the best option "*from an environmental and landscape point of view*".

An inference was, that like Salford and South Cambridgeshire, Cambridge City Council planners may have understood GA's socioeconomic benefits and the need for its national and regional support, but set against other priorities, a guideline to consider or take account of the need for additional GA activity was not likely to be supported at a local level, and that any resolution would need to be taken a higher level of government.

Gaining support for strategies

The examples of Salford, South Cambridgeshire and Cambridge City served to illustrate why the LPA survey found some correlation between *Guideline Interpretation* and the built environment, but failed to establish a link with the LPAs' *Common Beliefs*. Planners in those LPAs with significant responsibilities for GA activity, like Salford, South Cambridgeshire

and Cambridge City, had an awareness of the socioeconomic benefits of GA and some sympathy for the needs of the sites involved, but faced with environmental concerns and conflicting policy objectives, found themselves unable to support policies that allowed an intensification of GA activity in their particular district. Perhaps this was not surprising given the policy contained within PPG13 was not a directive. It could be easily complied with, needing an authority only to show it had 'considered' and 'taken account' of the issues.

During the LPA interviews, planners were asked if enhanced regional planning, then underway following the new 2004 Planning and Compulsory Purchase Act, or a national spatial plan for GA, as suggested by aviation supporters, might enable planners to be more supportive of GA. In Cambridge, it was agreed there was a need to view the issues in a strategic way, since most local authorities would judge it from a relatively narrow environmental perspective, which lost sight of other needs. But it was also felt that, although GA was an issue that should be dealt with at a regional level, the reality was, apart for regional airports, aviation would continue to a "*Cinderella*" activity and not covered at a regional level. A similar sentiment was expressed in South Cambridgeshire, where it was felt the 2004 Act would probably not have much impact on the way LPAs approach GA. Regional planning would focus on housing, employment and transport in a broad sense, and would not deal with the local issues handled by the local plan. In Salford, the view was it was too soon to judge how the 2004 Act would handle situations like Barton. When asked if there should be a strategic GA plan, similar to the one already being established for commercial air transport through *The Future of Air Transport* (DfT, 2005), it was felt it could be useful to local and regional planners and might help in the event of any proposed changes to Barton.

Similar opinions were conveyed by planners at Cherwell and Tewkesbury. A conclusion was formed that planners faced with difficult decisions regarding GA sites would welcome additional guidance and support from higher levels of government. However in its absence, other policy directives would continue to prevail due to local pressures, the relatively low priority given to GA matters and a general belief that flying was not compatible with environmental objectives.

7.3 Local perceptions

The previous section, addressed one of two areas identified from the LPA survey that might lead to strategic-local tensions. In the following, the second key area identified by the LPA survey will be explored, the degree that planners are able to perceive and understand the built environment for which they are held responsible. This was depicted in Figure (7.1) as a blue arrow on the right hand side of the process. Accordingly, after drawing upon an example of good practice, this section will consider other material from the field visits that explore the role of communication in shaping perceptions and then the difficulties planners may have, of translating a spatially diverse activity within the local context.

Compton Abbass - an example of good practice

Given Figure (7.1) suggested the *environment*, *economy*, *visual landscape* and *functional amenity* were four areas of the built environment which may not be understood or perceived appropriately by planners, the following will review an aerodrome that appeared to balance all four. Compton Abbas, located south of Shaftesbury in Dorset, it is accessible to the populations of Bournemouth and Southampton, but is also set 800 feet above sea level in a rural landscape, as illustrated by Plate (7.2). The site started in 1960, with a couple of 'Tiger Moth' aircraft, was acquired by the current owner in 1988 and has since expanded to accommodate 45 aircraft and 17,000 movements per annum. Based on the interest generated by flying activity, a customer base of non-flyers has also been developed which now provides the major revenue stream. The restaurant, for example, was said to prepare 55,000 meals per year, making it one of the major all year round tourist attractions in North Dorset. It has become a local amenity, an education centre and a restaurant, where painters and writers are said to visit. 120,000 visitors arrive each year by road, needing an 800 space car park and 32 staff. The site's main asset is evidently its elevated location, within an area of outstanding natural beauty. The site was said to be managed sensitively with, for example, 40% of the airfield organically farmed, such that relationships with the local planners, local councils, parish councils, chief executives were described as excellent. The site recorded a very low level of complaints about aircraft activity, with more than six complaints a year considered a failure. The level of complaints was reviewed bi-annually by the aerodrome's consultation committee.

Plate (7.2): Compton Abbas aerodrome, Dorset (Anderson, 2005).

It was said during the visit that the development of the site by the current owner, Clive Hughes, was not achieved without much discussion and involvement of the local planners and community. A Section 106 agreement had been negotiated, although it was alleged to be now somewhat outdated, particularly as it focused on aircraft noise levels in excess of today's standards. Restrictions also exist on aircraft weight and it excludes the

possibility of night flying and parachuting, but there are no limitations on the number of movements. Recently two additional hangars have been built and there were plans to improve the restaurant and add a second floor, evidence of the continued support from the local council and community. Clive Hughes, described his experience in dealing with the local community in the following way:

> *'It was found by engaging with the local residents and community that very few people wanted no aviation at all. Most either don't mind it or have no feeling either way and accept it as part of life. Complaints come from only a handful of people, usually newcomers to the area. People have misconceptions and often think pilots are brash and own Ferraris. Once they understand most pilots are ordinary people, with ordinary jobs and cars, people became more accepting towards GA. The biggest problem with GA today has been a lack of communication' (Hughes, 2005).*

Compton Abbass serves to illustrate the potential to blend GA within a rural setting, creating employment and yet, not significantly impact the local environment. Two other sites visited were also within areas of outstanding beauty, Dunkeswell near Honiton and Sandown on the Isle of Wight, and they equally seemed to achieve a similar balance between activity and environmental impact.

Enabling understanding

Several points drawn from the example of Compton Abbass may also be illustrated by other sites visited. Communication was held to be the key issue, but equally this relied upon good supporting activities, including a consultative committee, public meetings, planner involvement, noise control and monitoring, and contacts with local politicians.

Consultative committees were not universal feature of the sites visited, with 1 in 2 holding such meetings. Of those that did, some appeared to have established committees from public representatives and local residents on their own initiative. Wycombe and Shoreham did so as a legal requirement under Section 35 of the Civil Aviation Act 1982, whilst Little Gransden was obliged to do so under a condition of use. Others, for example Bourn and Breighton did not have committees, essentially because complaints were said to be too infrequent. The level of complaints varied significantly between sites. Bourn, which had 127,000 movements per year seemed to have the lowest rate of the sites visited. It allegedly received only one or two complaints every few years. Wycombe Air Park, a Category B site adjacent to High Wycombe, Buckinghamshire, in contrast generated 800 complaints per year from 160,000 movements, a ratio of 1 in 200. This was the highest rate found. A more typical rate was less than once a fortnight, for 25,000 movements, or 1 in 1,000. Those sites that did not operate formal consultative committees tended to adopt a more direct personal approach to complaints, seeking out offending pilots and engaging with complainants. Bourn tightly controlled both the aircraft and pilots based on the site and was said to take persistent complainants for a flight to help their understanding. For example, one local resident was convinced pilots were looking into her bathroom, but a flight around the circuit demonstrated to her satisfaction, this was not possible at 600 feet and 60 knots. Another site without a formal

committee, Sherburn-in-Elmet, was known to have invited local councillors and the local MP to visit the site, whilst representatives from the large gliding site at Lasham, would regularly visit parish council meetings.

In terms of the perceptions held by the five LPAs visited, when questioned about aerodrome complaints, planners at Cherwell District Council remarked that complaints about Oxford airport were "*probably no more significant than other activities, for example the 24 hour operations in Banbury that use floodlights*". Similarly at Tewkesbury it was said about Gloucester (Staverton) airport, "*the level of complaints was not an issue. The airport has been there for a very long time and people moving to Churchdown would know it existed beforehand*". The development officer at Salford was not aware of any issues concerning Barton and both Cambridge City and South Cambridgeshire councils felt noise was an ongoing, but manageable consequence of flying. It was concluded from the field visits that most sites maintained a watching brief over noise levels, although some were frustrated by persistent complaints from individuals that had moved into the area. This latter point, concerning newcomers, was mentioned at five of the aerodromes visited. Three of them claimed it had needed a judicial review to resolve the situation (each in favour of the aerodrome involved). On the communication side, only a minority of sites appeared to have the close relationship with the local planning department that was evident at Compton Abbass. They appeared to prefer not to draw attention to their site, and maintained achieving a low complaint level was part of their strategy to keep a low profile. This *status quo* attitude was reflected in the *Aerodrome Operators*' survey which found 39% of Category A, B, C and D operators wrote in less than once in five years about their LPA's local plans.

Appreciating a spatial connection

Whilst planners interviewed were familiar with land use issues raised by local aerodromes, and the general level of noise complaints presented by flying activity, it was clear their understanding of the activities at individual sites was limited. Whilst recognising planners could not be expected to understand all the operations carried out at premises and sites within their jurisdiction, two aspects of GA sites were thought to be particularly difficult for non-aviators to appreciate; GA's dispersed economic footprint and the connectivity of sites. The first was discussed in Chapter Five and the following will now explore some issues surrounding the spatial connectivity of GA.

As was mentioned in Chapter Three and Chapter Five, the spatial nature of GA activity was seen as an important feature early in the research. Indeed, the selection of field visits was based on exploiting the linkages between sites, using a 'snowball' methodology for field visit site selection. The 'snowball' methodology was described in Chapter Four, and illustrated by Figure (4.9), which also provided an insight into the range and complexity of the aerodrome network and the connections involved, when it was shown how a wide spectrum sites were listed in ATC records, across all categories of aerodrome and involving all types of aircraft.

As well as identifying the most frequently listed aerodromes, where possible a secondary analysis of the ATC movement records was conducted during the field visits. The results were discussed in Chapter Five, and presented in Table (5.9). It suggested that generally 50% of movements recorded were for 'A to B' flights, meaning 50% were 'A to A' flights. However, although on average 50% of the flights involved landing away the statistic varied significantly between sites. Those sites, which had a high element of pilot training activity and included circuit training 'touch and goes' in their movement record, had a higher percentage of 'A to A' flights. As mentioned in Chapter Five, Staverton near Gloucester and Barton near Manchester, clearly exhibited low rates for 'A to B' flights. When visiting these sites, the aerodrome operators were asked why they thought this was a feature of their site. Both gave similar responses. Kay Nugent's response, explaining why Barton had only a 24% level of 'A to B' flights, illustrates some typical reasons for a low ratio of land away journeys:

> *'Based on personal experience, this might occur because there were few other places to fly to. The micro-climate around Manchester also affected the ability to fly further. Blackpool is expensive at £27 for a Cessna 172, Caernarfon is an hour away, Sleap at 45 minutes was popular when there had been a reciprocal arrangement but has limited facilities. Liverpool, on the other hand, was probably on the list because they were flying to Barton often for maintenance. Comments on the other sites in the top 12 were: Tattenhill is 50 minutes away, Ince is a microlight field and, although Sherburn is on the list, there is now no longer a reciprocal arrangement which will affect its popularity.' (Nugent, 2005)*

The inference was that Barton represented a site, like Staverton, which although located near a very large urban population, was relatively isolated from other aerodromes. Where there was a weak local network, it suggested that pilots were less likely to fly to other aerodromes. If so, an implication was pilots would be less experienced in landing away, thus raising the possibility that one undesirable outcome of an aerodrome closure, or a widely dispersed aerodrome network, might be a diminution in flight safety standards.

Achieving a balanced perspective

Chapter Six had suggested planners were not particularly aware of the GA built environment, as highlighted by Figure (6.5), where there was no association between the size and number of aerodromes in a district and the environmental and socioeconomic views held by planners about GA. This finding was then reflected in Figure (7.1) as a blue arrow, on the right hand side of the process. In the foregoing, a review of the sites visited suggested that in the right circumstances, and when managed by an aerodrome operator who was prepared to work hard communicating with local planners, politicians and residents, small aerodromes can develop in environmentally sensitive areas without causing unacceptable issues. It also seemed that most operators worked hard to minimise the impact of noise upon local residents, but the suggestion was that, unlike sites such as Compton Abbass, Dunkeswell and Sandown, the motivation was to maintain the *status quo* and avoid any intervention from outside authorities. This finding provides an example of the 'deterrence' effect noted by Gilg (2005: 67), which had been discussed in Chapter Three. The wide spatial nature of the GA network was also illustrated by the field visits, as had been discussed in Chapter Four and

Chapter Five. They provided an insight into the interconnectivity of sites and confirmed aircraft flew across, not just district planning boundaries, but county and regional boundaries. It was also suggested that where differences occurred in the ratio of 'A to A' and 'A to B' flights, they might be due to a weak spatial network in that region, and that this in itself, might cause a reduction in flight safety.

A conclusion reached in this section was therefore, that whilst owners and planners generally seemed able to work together to avoid land use issues, many owners actually avoided contact with local planners, and consequently planners only became aware of GA when there was an issue raised by others. This would help to explain the lack of key associations found in the LPA survey. It also implied that local planners, focussed upon land use issues and with district responsibilities, were not familiar with the wider network implications of decisions about their local aerodromes. This placed a responsibility for educating local planners about GA upon the shoulders of local aerodrome managers. However, since it was a difficult argument to present at a local level, where a single piece of the jigsaw would appear relatively insignificant, it was perhaps rarely fruitful; leading operators to be possibly deterred from further contact and to accept the *status quo*.

7.4 Strategic-local tensions

The previous two sections described evidence found during the field visits which showed gaps in the framework concerning strategic guideline support and planners' local perceptions of the built environment. There seemed to be little evidence of support for a strategy, as implied by PPG13, which might bring a local intensification of GA activity, especially since there was a general belief flying was not compatible with environmental objectives. Yet, at the same time, it seemed planners would have preferred to have been given additional and more directive guidance from higher levels of government, since current advice could conflict with other policy objectives and possibly LPA resources. As regards planners' perception of the built environment, a conclusion was reached that many sites avoided contact with local planners and consequently planners only became aware of GA when there was an issue; a point supported by the finding in Chapter Six which found that planners were not always aware of all the sites within their district.

The following will focus upon the effects of these disconnections between strategy, planners and the built environment. In Figure (7.1) these disconnections were taken to cause the strategic-local tensions, as depicted by red arrows, and evident in the quality of development control decisions, enforcement and development plans. The following section will accordingly first explore the field visit evidence for inconsistencies in planning decisions. It will then consider the degree that public, private and civic interests were found to be balanced.

Development control and development plan decisions

During the field visits numerous examples were found of apparent inconsistencies in planning decisions, mainly from one district to another but also within a district. The previously

discussed sites of Bourn and Little Gransden serve as examples of a possible inconsistency regarding planning conditions; Little Gransden, with 15,000 movements per year was subject to restrictions, whilst Bourn, five miles east of Little Gransden with 127,000 movements per year, was not. Yet as Plate (7.3) and Plate (7.4) appear to suggest, their respective proximity and runway alignments relative to local settlements are similar.

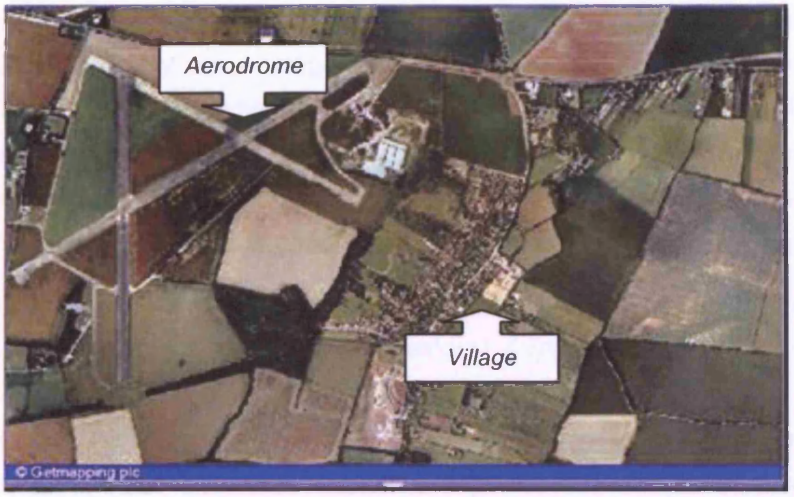


Plate (7.3): Aerial view of Bourn Aerodrome, South Cambridgeshire District (Multimap,

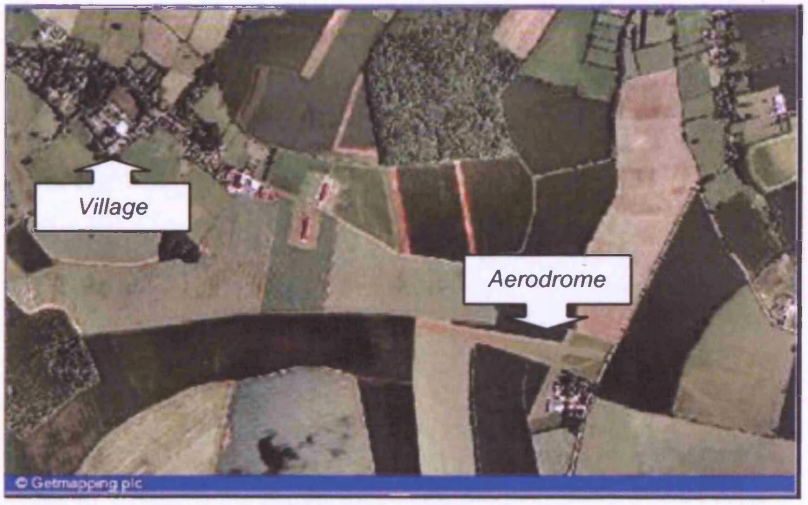


Plate (7.4): Aerial view of Little Gransden, South Cambridgeshire District (Multimap, 2006)

In this particular instance, it would seem the difference between the planning approaches taken at each site arose when the owners of Little Gransden began importing ex-military Soviet aircraft. Such aircraft are recognised to be noisier than normal light aircraft. The LPA issued a Planning Contravention Notice and this led, following a public inquiry, to the application of conditions. In contrast, Bourn, with its low level of complaints, recently obtained permission from the same local authority to add another hanger without the need for conditions. This difference in treatment may have been due to lessons learnt from the Little Gransden inquiry, but it might have also reflected the very low level of noise complaints concerning Bourn, as discussed previously. Given the eight fold difference in movements between the sites, it perhaps confirms that events at Little Gransden were driven by the change in noise levels experienced by local inhabitants, rather than an objective view of

development impacts, and that neither aircraft hangarage nor aircraft activity ought to be necessarily associated with aircraft noise; a point that will be returned to shortly.

Other authorities have also allowed changes without necessarily applying conditions: Stapleford, located north east of London and a category 'B' site, had installed a partial hard runway after some resistance from the council, but no conditions of use were applied; Blackpool, a category 'A' site, built a terminal building ten years ago, but still operated without conditions; Oxford (Kidlington), a category 'B' site, has extended its runway and built a new terminal since 2003 without needing to enter a Section 106 or adhere to any flying conditions. It was not expected that such sites, which had immunity to planning controls on flying activity because they predated planning regulations, would be allowed to change add buildings and runways without the LPA taking the opportunity to negotiate a Section 106 agreement.

Equally, where conditions had been applied, they have appeared to be inconsistent. For example, following objections from a local resident, daytime flying restrictions were applied at Full Sutton, a category 'C' site near York, when an additional grass runway was installed. Subsequently, permission to build a new hangar on the industrial side of the site was rejected, as the planning department curiously stipulated any airfield development should be on the green belt side. Since then two new hangars have been built on green belt, see Plate (7.5), in the absence of resident objections and without any requirement for tighter flying conditions.

Plate (7.5): The new hangars in the Green Belt land at Full Sutton, Yorkshire

Whilst in the cases of Full Sutton and Bourn, some LPAs appeared not to be concerned about additional hangerage in terms of increased flying activity and noise, at other sites this assumption has underpinned relationships between the aerodrome operators and their local planners. A particularly notable case was found at Wycombe Air Park, which is owned by High Wycombe Council, operated by British Airways Flying Club (BAFC), but as was mentioned previously, generated a high ratio of noise complaints from local residents. BAFC have made approximately thirteen planning applications in the past ten years, seven of which have been rejected on the grounds that improved facilities, like additional hangars or

extra office space, would result in increased activity and hence more noise. Of these seven rejections, four went to Appeal and only one was allowed. This was despite the existence of a long lease which allowed the site to be operated without any limit on movements or aircraft (parked or hangared). Consequently BAFC, like others visited where there has been an associated concern for noise levels by local residents (Fairoaks, Barton, Dunkeswell, Wellesbourne, Retford, Maypole and Little Gransden), have been unable to accommodate demands for more aircraft hangarage and have regularly turned away potential GA customers.

A similar situation was found regarding approvals for non-aviation change of use applications. The issue of mixed-use was thought to be of significance to GA aerodromes, because as shown in Chapter Five, Table (5.17), the income from hangarage and landing fees was relatively small, such that additional revenue streams have been necessary to maintain the fabric of some sites. For example, the financial viability of Compton Abbas was dependent upon income from its secondary activities, the museum and its extended restaurant. A clear example of how mixed-use activity contributed to an aerodrome's economic viability was found at Sywell in Northampton. The site, which was established in the 1920s by the two principal shareholding families, the Shaws and the Bletsoe-Browns, inherited extensive hangars and grass runways following an expansion in the 1930s and the repair of Wellington bombers during WWII. It returned to civilian use in the 1960s, but activity had waned by the 1990s when the viability of the site reached a critical point. So it was decided to embark on a redevelopment plan that would enable it to become an active and busy aerodrome once again. The first phase of the project was to build a new conference, restaurant and hotel complex, based on a theme of the early aviators, as shown by Plate (7.6). Hangars were then upgraded into new office developments that commanded higher rentals, due to the interest created by an aerodrome. It was said, that by investing £30 a square foot on the existing structures it had been possible to generate £5 per square foot, sufficient to recover costs and achieve a sound financial return that could be reinvested in the otherwise less profitable aviation business.

Plate (7.6): The new Aviator Hotel, Sywell Aerodrome, Northampton

The development of Sywell contrasts with another grass strip site with a similar history. Redhill aerodrome was opened in 1930 as a flying club, before developing as a civil aerodrome and then used during WWII by the RAF. It was returned to civilian use in 1947, but there followed an economically difficult period through to the 1990s, during which the site was acquired by six private investors. In the meantime, Bristow Helicopters plc had based their company headquarters at Redhill, however, in 1998 the company ceased their pilot training at the site and the economic difficulties returned. The owners have since attempted to develop the site, but permissions to use the excess hangarage for non-aviation use or to install a hard runway have been rejected by the two district councils involved (Tandridge, Reigate and Banstead). Both councils were said to have refused to discuss a forward plan for the site and as a consequence the owners recently applied for, and then had rejected, an application to develop a 'Poundbury' style village on the site. When permissions had been sought, either to develop the aerodrome facilities or to replace it with housing, there has been an adverse public reaction followed by a rejection of the proposal. It was said by the aerodrome manager that local residents and the two district councils wished the site to continue exactly as it was. In view of continuing economic pressures this has, however, meant the site has remained with an unresolved and uncertain development status.

Balancing public, private and civic interests

The examples of Cambridge, as mentioned earlier, and Redhill serve to show how an LPA's approach to development control and development plan decisions may be closely linked to local public, private and civic interests, where the balance struck between these interests appeared to be finely balanced.


the Reporter

Your local newspaper serving Saffron Walden, Stansted and Sawston

SCRAMM VICTORY

Fire crews' plea to drivers: Don't block our way

DUXFORD

Please drive carefully

SALE

up to 50% off

Plate (7.7): SCRAMM claim victory over Duxford proposal (Reporter, 2005)

When Cambridge City Council announced plans to move Marshall's airport it immediately created a wave of public concern which challenged the assumptions behind the

proposal. The public was said to have resisted the development of a large housing development and supported the continued existence of the airport. Then paradoxically, public anxieties were reignited when an alternative proposal was suggested by Marshall, as a means of ensuring the survival of the airport. It involved building a new passenger terminal and introducing more scheduled flights. Various special interest groups, including SCAM, South Cambridgeshire against Marshall, Cambridge Friends of the Earth and the Cambridge Flight Path Association challenged the proposal and after much public debate and pressure Marshall's planning application was withdrawn. Then in 2004, when it was proposed Marshall moved to Duxford aerodrome, another group was formed, South Cambridgeshire Residents against Marshall's Moving, SCRAMM, which returned to the earlier position of wanting to retain the existing airport. Although, as illustrated by Plate (7.7), SCRAMM claimed victory when this suggestion was withdrawn, as mentioned earlier, the proposal was also resisted by South Cambridgeshire District Council, despite a recognised regional need to provide more housing in Cambridge. In addition to believing Marshall would have to inevitably relocate, the Head of Cambridge City Council's Planning Policy and Projects felt the public had missed the main economic point; that unless Marshall relocated its operations within Cambridgeshire, its aerospace activities would probably move offshore and be lost to the county. In summary, the situation was that whilst private interests required an improvement in its airport's economic performance, civic interests needed to allocate land for housing development, even though the public wanted to see no change.

A similar situation was also found at Rochester aerodrome. Rochester aerodrome was the subject of much public interest in 1999 when BA Systems, decided to withdraw from the site. A consortium of local pilots applied to take over the lease and Medway Council, the site owners, agreed but then put forward a development plan to change the site to a science and technology park. At the public inquiry for the council's Deposit Plan, local residents and pilots in the South East made clear their objections against the closure. In the event, the inspector ruled against the council's proposal saying "*I consider the Plan gives insufficient weight to the importance of the existing Rochester Airport, and recommend a redevelopment option which allows [...] the retention of a general aviation facility [...]*". Despite the Inspector's ruling the development status of the site has remained uncertain; since the operators did not feel confident the council will allow the lease arrangement to continue indefinitely.

The conflict between local councils, as aerodrome land owners, and the pressure to relieve development pressures, was also found at Staverton (Gloucester) airport. Staverton is jointly owned by Gloucester and Cheltenham City councils and for planning purposes overseen by Tewksbury District Council. The aerodrome, lies in the middle of the narrowest part of the statutory green belt between the cities of Cheltenham and Gloucester, as shown by Plate (7.8). Gloucester City has in recent decades faced particular issues of urban expansion, as it is constrained by a flood plain to the west which restricts its options for growth. The green belt between the two cities was established to prevent them merging and, consequently, Gloucester City could only grow to the south and to some extent to the east, placing what was described as an immense strain on Gloucester's infrastructure by making the city very spatially

imbalanced. Gloucester planners have naturally wished to expand to the north, utilising the airport. Earlier attempts to do this, in the late seventies and early eighties, were rejected by public inquiries, but since then the sustainable transport agenda has given cause for repeated proposals by Gloucester City for large scale development and the closure of the airport. Only the distinctly different natures of the two cities concerned, which has been especially cherished by Cheltenham, and the fact that the airport lay outside of both city boundaries, has so far prevented the closure of Staverton airport. As such, the balance struck in favour of the *status quo* relies heavily on the political relationships between the three councils involved.

Plate (7.8): Staverton Airport - between Gloucester and Cheltenham (Streetmap.co.uk).

The LPA survey found four of the eight Category A airports surveyed were council owned like Staverton. It was estimated that in total, 40% of Category A and Category B sites occupied civic land, and could therefore be assumed to face similar pressures. Aerodromes owned by councils were not alone, however, in facing development pressures. Whether owned by individuals or companies, virtually all the case study sites visited, apart from those in rural isolation like Compton Abbas, could conceivably be sold for speculative development. Sites owned by individuals interested in aviation, like Popham, which is owned by the wife of the late property developer, Charles Church (who unfortunately died whilst flying his Spitfire), Dunkeswell purchased by four pilots, or Full Sutton owned by an active pilot, may appear secure, but family members could eventually take an alternative view. Other sites owned and operated by families that had inherited from the founders, like Sywell and Wellesbourne, agreed they were also vulnerable to changing family politics. Aerodromes owned by individuals, but not operated by aviators, like Bourn and Breigton, might be consider to be even more at risk. Bourn, for example, is located on the fringe of an expanding new town. It was said the farmer owner frequently received proposals from speculators. Nor could it be held those sites owned by aviation based companies, like Oxford, Fairoaks and Cambridge were immune to change. The only site visited that appeared to be secure from family or shareholder pressure was Lasham, as it is owned by the Lasham Gliding Club, essentially as a cooperative based on a substantial pilot membership.

More localised than strategic

This section was concerned with evidence of strategic-local tensions, which were felt to arise from a lack of strategic support and gaps in planners' perception of the built environment, regarding GA. It illustrated through the cases of Little Gransden, Bourn, Full Sutton and Wycombe Air Park and others, inconsistencies in the application of planning conditions to regulate flying activity, and in particular questioned the argument used by planners that additional aircraft hangarage necessarily increased aircraft activity and consequently noise complaints. Then Sywell and Redhill were contrasted as examples of differing approaches to non-aviation activities, illustrating how the absence of an additional revenue stream may influence the financial viability of a GA site and increase uncertainty about its development status. A general thread drawn from the cases reviewed was that the use of conditions was often associated with evidence of public complaint, and that comparisons with other sites where conditions had not been applied, suggested decisions may have been made as a reaction to public pressure rather than an objective appraisal of development impacts.

The importance of public expression to development decisions was also evident in the cases of Cambridge airport and Rochester aerodrome, where public reactions coincided with decisions that maintained the *status quo*. Rochester also highlighted the possible conflict between civic ownership and stewardship, where local councils not only controlled the land but could apply planning regulations. It was estimated that 40% of Category A and B sites could be subject to this conflict of interest. Gloucester and Cheltenham's shared airport at Staverton was seen to be a hybrid of this issue, since planning responsibility rested with a third LPA. Otherwise, it seemed likely that given to the spatial imbalance of development around Gloucester the site would have closed in the 1990s. A conclusion drawn was that all aerodromes, whether owned by councils, individuals or companies, were conceivably at risk of development pressures depending upon the balance between local public, private and civic interests.

The delicate balance between local public, private and civic interests and the apparent role of public objections in influencing the application of flying conditions or the suitability of mixed use development, leads to a conclusion that the focus on aerodromes has been highly localised. They have been underwritten by either a concentration upon noise effects or the development potential of particular sites, which has often led to a maintenance of the *status quo*, but has rarely been elevated to strategic considerations. The localisation of planning decisions across a national network of sites appears to have caused the wide variety of treatments that, except when overseen by the Planning Inspectorate, do not reflect the intent of PPG13 to address wider spatial needs with supportive decisions. This would suggest that strategic-local tensions are characterised by an imbalance, not as might have been thought through the imposition of unwanted strategic initiatives by an over centralised government, but by an emphasis on the particularities of local situation and the protection of the *status quo.*

7.5 Case study observations and inferences

The chapter has reviewed a wide variety of cases, made observations and highlighted a number of points, based on the case study material provided by local planners and the GA industry. In this last section, the intention will be to distil these observations and points relative to Objectives Three and Four, to develop several specific GA conclusions, which may be of particular interest to those in the GA industry, and to identify a number of broader planning issues that will discussed in the next and final chapter.

Achieving research objectives

Four research objectives were set in Chapter Three. The first two, aimed at a classification of aerodromes and providing a substantive case study background, were achieved, as was demonstrated by Chapter Five. In this and the previous chapter the focus has been on the second two objectives, Objective Three and Objective Four.

Objective Three, was aimed at the original proposal to the 'test out' the ESRC report:

> *To complete the 'testing out' the findings of the ESRC project regarding GA sites, by conducting a survey of local planning authorities in England, followed by appropriate field visits to both aerodromes and local authorities, with results both cross related and analysed by category of flying site.*

This chapter and Chapter Six have established this objective was achieved. Chapter Six concluded that by not classifying sites according to significance and by not recognising many sites operate without local planner involvement, the original report may have overemphasised planning's intervention in flying matters. This chapter has broadly reported a similar situation to that found by the ESRC team during their field visits. They had uncovered examples of strong local opposition that appeared to influence local policies, concluded that county policies were ineffective in restraining local councils from pursuing their preferred approaches to particular sites, and that conditions had been irregularly applied and appeared to lack any national guidance processes to ensure uniformity of treatment at local levels (Gallent et al, 2001: 209). The contribution from this research, in terms of 'testing out', has been that the field visits conducted were not only built on a substantive secondary analysis but were able to provide possible explanations as to why intervention varied, particularly regarding the part played by noise complaints and development potential upon the use of conditions.

Objective Four encompassed the three core hypotheses which had emerged in Chapter Two:

> *To extend the LPA survey as a means of testing the research hypotheses; by focussing upon the relationships between local planner attitudes, local authority support and the implementation of government guidelines.*

This chapter and Chapter Six have demonstrated this objective was also achieved. It has become increasingly apparent from this chapter that, for GA at least, based on the

findings of the LPA survey and the nuances uncovered by the field visits, the three null hypotheses must be rejected; adding to the evidence that the strategic guideline process was ineffective, at least as far as GA was concerned. There was insufficient evidence to suggest local authorities have accepted the guideline laid out in PPG13 and used it to challenge the *status quo* to achieve its desired outcome, of enabling the displacement of GA from regional airports to be accommodated by lesser sites. Only in the case of 'safeguarding' as laid out in the GDPO Circular 01/2003, was there some evidence of compliance with the national strategy. However, as was noted in Chapter Six this probably have reflected other policy objectives and, in any case, was generally driven by aerodrome operators not planners.

Whilst it is held all four research objectives were achieved, the value in their achievement must be judged on their ability to answer the research questions posed by this thesis. Before addressing this point, in the final chapter, the following will first draw some conclusions about the research regarding GA, and then attempt to identify several issues which were felt integral to any answer regarding the research questions.

GA specific conclusions

In achieving Objectives Three and Four, three main points emerged which were specific to the general aviation industry:

1. A more effective way of guiding local planners, in relationship to GA, is required if the inconsistencies noted are to be minimised. The use of PPG13 to encourage supportive actions appears to have been ineffective and yet it is questioned if a stronger worded version would be any more successful. Working within the current planning framework, one option might be to develop a broad network plan for the industry, backed by the CAA. It could, for example, identify key GA sites, in addition to those already identified in the Air Transport White Paper, as strategic resources that might form part of regional plans and encourage consultation with the CAA and related NGOs.

2. The linkages and inconsistencies between local complaints about aircraft noise, use of conditions to restrict flying and refusals to allow aviation related development appeared to be strong, based on the cases reviewed. They would be rich material for any researcher to further explore, particularly someone who was also interested in the relationship between GA and planners. An LPA's reaction to noise complaints from aggrieved residents appeared too often to have been, to simply impose conditions upon the aerodrome, or to restrict development on sites. Yet, these sites appeared to be similar to other sites not affected by complainants. In this respect it was felt the GA industry could be more proactive in providing support to small sites, for example by investing in research which compared actual noise survey data with planning interventions, with a view to developing guidelines on best practice for both site owners and LPAs.

3. This research has uncovered long term trends in aircraft utilisation that ought to be factored into any strategic appraisal of the industry. Individual aircraft now fly on average

significantly less hours per year, yet at the same time the number of aircraft in the country has significantly increased; such that has been a levelling out of overall activity. Where LPAs have adopted a policy of restricting the building of hangars, which would have otherwise accommodated the growth in aircraft numbers, it appears to have caused adverse economic pressures for local GA companies, due to a fall in activity, and at the same time led to the dispersal of GA activity to a multitude of smaller, less regulated sites. It is felt that those involved in the GA industry ought to more closely monitor this changing social pattern in aircraft ownership and develop strategies that supported the continuation of flying at traditional, regulated sites.

Broader planning issues

The specific recommendations for those involved in the general aviation industry, are inherently underpinned by the way the planning system operates with in Britain. Consequently the following aims to detect broader planning issues from the preceding analysis that have relevance to the wider landscape of planning and planning reform.

The difficulty has been to disentangle the many issues that surfaced. As was quoted in Chapter One, the late Barry Cullingworth felt most planning issues were interconnected. He was almost disdainful of many planning 'problems' that were presented, as he felt were "*perceptions of a wider vortex of issues*" (1997: 950) and too often positioned in terms of desired answers to suit particular arguments. The interrelationship of 'problems' may be judged by a short encapsulation of the findings in this chapter, which focussed on the 'gaps' evident from the LPA survey. It was found that the guidelines encompassed in PPG13, which called upon LPAs to consider the benefits arising from GA activity and take account of a trend to displace GA activity from the regional airports, were understood but only applied in a limited sense, and where it suited the local situation. Yet, the impression gained was that planners faced with difficult decisions regarding GA sites would welcome additional guidance and support from higher levels of government. In its absence other policy directives would continue to prevail, due to local pressures, the relatively low priority given to GA matters and a general belief that flying was not compatible with environmental objectives. However, sites like Compton Abbass showed that with effective communication, a balance could be struck between environmental concerns and socioeconomic benefits. At the same time it was also suggested many owners actively avoided contact with local planners, and consequently planners only became aware of GA when there was an issue raised by others. This led to a conclusion that the focus on aerodromes has been highly localised, underwritten by either a concentration upon noise effects and/or the development potential of particular sites and biased towards to a maintenance of the *status quo*, which was only challenged and raised to include strategic considerations when the Planning Inspectorate become involved. In short, the combination of strong local discretionary powers and a weak strategic direction did little to help the strategic-local tensions experienced between GA businesses/users and local residents/planners, because the latter held the veto.

The foregoing certainly illustrates the interconnection of issues, but critically it also highlights that the main 'problem' is that of achieving a balance. It suggests that to ease strategic-local tensions the relative balance between local and strategic forces would need to be addressed. Reference back to Chapter Two and Figure (2.6), was found useful in this respect, as it depicted the balance between strategic and local forces might operate across several factors; including *actors*, *power* and *focus*. Reflection on these factors enabled four issues to emerge that will be carried forward to the final chapter, as the basis for discussing the conclusions reached about the research questions.

- In terms of 'Actors' the case study suggested the balance was tilted in favour of local pressure groups, often formed from aggrieved individuals. This pointed towards an issue of how best to improve the *participation and communication* involved in planning decisions, such that a wider electorate might be involved in the decision making process.
- 'Power' was clearly found by the case study material to be strongest at the local level, particularly with regard to a tendency to maintain avoid change and use local discretionary powers. It seemed local planners needed support to overcome local pressures and regional planners needed to be more supportive, if more progressive policies were to be effectively pursued. This led to thoughts as to how *planning's culture* might be made more proactive at all levels; national, regional and local.
- Finally, considering the two sides of 'Focus' raised both a issue of how to improve *strategic direction*, based on a finding that strategy was too generalised and not integrated across sectors, and the question of how to choose between local interests and wider public interests, which in the following will be referred to as deciding between *conflicting interests*.

In summary, four broader planning issues were identified from the vortex of issues regarding local-strategic tensions, as uncovered and discussed in the foregoing chapters. These broader issues were in terms of improving *participation and communication*, changing *planning's culture*, strengthening *strategic direction* and choosing between *conflicting interests*. By considering these issues, as will be described in Chapter Eight, it was felt conclusions could be reached concerning the research questions posed by this thesis.

A greater understanding of the issues?

The aim of this chapter was to add to the knowledge accrued over preceding chapters, by reaching some specific conclusions about GA and general observations about the planning process and the strategic-local tensions it generates, in line with Objectives Three and Four. In short, as expressed by Yin (2003; 150), the intention was to use the case study method to gain a greater understanding of the issues involved.

In terms of the four research objectives set in Chapter Three, it was held this chapter and Chapters Five and Six demonstrated they had been achieved, although it was recognised the value in their achievement must rest upon their ability to answer the research questions

posed by this thesis. The 'testing out' approach adopted by the research, as covered by Objective Three, was felt to be useful in this respect, since although it broadly reported a similar situation to that found by the ESRC team, it enabled, through a more substantive precursory secondary analysis, to provide possible explanations as to why the level of planning intervention varied from site to site. Regarding Objective Four, it was concluded that the three null hypotheses established in Chapter Two must be rejected; throwing into doubt the effectiveness of the strategic guideline process, at least as far as GA was concerned.

The chapter added to the findings of the LPA survey by significantly elucidating relationships between local planner attitudes, local authority support and the implementation of government guidelines. It provided an explanation for the gaps found in the framework used to analyse the survey, namely why LPAs did not necessarily adhere to national guidelines and why planners appeared unaware of their local GA infrastructure. It was concluded the combination of strong local discretionary powers and a weak strategic direction had done little to help the strategic-local tensions experienced between GA businesses/users and local residents/planners. Illustrated by actual cases, the chapter developed themes that were used to explore the roles played by public, private and civic interests in the setting of conditions or refusals for planning permission. It was from gaining a greater understanding of these and other aspects that both GA specific and wider planning concerns were clarified. The specific GA concerns included the need for a broad network plan, the possibility of further research into the part aircraft noise plays in the treatment of aerodromes and the significance of long term social trends in aircraft ownership. It was noted that the interconnection of issues evident in the case study material critically highlighted the main 'problem' was that of achieving a balance between strategic and local forces. It was suggested that to ease strategic-local tensions the relative balance between local and strategic forces would need to be addressed. By reflecting on this balance, four broader planning issues were then identified; in terms of improving *participation and communication*, changing *planning's culture*, strengthening *strategic direction* and choosing between *conflicting interests*.

These four broader issues, arguably relevant to all planning situations, will be further explored and considered in the next and final chapter, set not within the confines of general aviation and the case study material, but in the context of wider planning reform and contemporary issues. As such, the final chapter will bring the thesis to a conclusion by answering the basic and refined research questions, as set out in Chapter One and Chapter Two.

CHAPTER EIGHT: THESIS CONCLUSION

After briefly summarising the preceding chapters, this final chapter addresses the four broad issues raised by Chapter Seven. It uses the case study material and the literature to question current reforms of the UK planning system before revisiting and reaching conclusions about the two research questions. Finally, it reflects upon the methodology, the contribution and the research opportunities arising from the work undertaken.

8.1 A journey completed

This final chapter aims, as was suggested by the first paragraph of Chapter One, to focus a revealing light, powered by specific case study tensions between local and strategic needs, upon land-use planning situations beyond the general aviation industry. Four broad planning issues were identified in the preceding chapter; improving *participation and communication*, choosing between *conflicting interests*, strengthening *strategic direction* and changing *planning's culture*.

These issues are further examined in this chapter and then used to answer the basic and refined research questions, which were developed in Chapter One and Chapter Two. Finally, the chapter considers and reflects upon the methodology used, the research contributions made and research opportunities revealed. As a first step in this final phase, the following starts by summarises the progress of the thesis to this point; in order to recall the journey undertaken and provide a backcloth for the conclusions ultimately reached.

The track taken

The main themes of the thesis, concerning strategic-local tensions, were introduced in Chapter One and its origins, as a 'testing out' of an earlier ESRC research project, were described. Chapter One went on to justify the research based on a preliminary review of the literature at the time the research was initiated, explain why general aviation was seen to be a suitable case study subject, and why a particular issue appeared to stand out from several possible issues worthy of investigation. It described why it was decided to investigate the way national strategies were implemented, arguing that without a sound process for implementation, other strategies were likely to fail. This discussion led to a basic research question regarding the ability of current reforms to provide a more effective, less conflict laden process.

Chapter Two then continued to draw upon the literature and develop the main themes by discussing and exploring the wider planning environment beyond GA. It followed a process of understanding and contextualising the basic question; by disaggregating its meaning, looking at planning's *raison d'être*, its history, the factors that have shaped it, the promise of new approaches, the nature of conflict and the role of public interest, and how decision making, politics and British legal processes were all tightly bound together in a landscape that affected the relationship between strategic objectives and local implementation. It discussed how strategic-local tensions arose at various levels, involving

actors, power, legitimisation and focus, noting that Britain's emphasis on discretionary powers seemed to contrast with other countries. It suspected that they might have allowed local interest to sometimes override wider public interests and favour the *status quo*. From this wide ranging infusion of factors, a more refined research question emerged. To address this question, three research hypotheses were developed, which then shaped the rest of the thesis.

Chapter Three established the broad methodology and frameworks used in the thesis. Like the first two chapters it was also grounded upon the literature. It developed a means of measuring planning effectiveness, choosing to adopt a traditional input-output-outcome view of the strategic guideline implementation process. Then Chapter Three defined and set general aviation in an historical context, described the concerns felt by the industry and reviewed planning literature regarding general aviation, before addressing several methodological issues that had shaped the research approach. Recognising difficulties in evaluating the strategic guideline implementation process, it proposed a simplified local planning authority model. The need for a common denominator for measuring the spatial characteristics of general aviation was discussed and a method of evaluating the direct consumption of GA, based on expenditure rather than income, was put forward. Finally, the chapter developed four research objectives and reviewed contemporary concerns about the direction of planning reform.

The detailed methodology used to test the three hypotheses was outlined in Chapter Four and, in particular, the simplified local planning model was translated into a framework that could be adapted to suit the questionnaire planned for the proposed LPA survey. The results of a substantive secondary analysis of the case study subject were revealed in Chapter Five. As well as defining the extent of GA in the UK and the categories/number of aerodromes and aircraft involved, the chapter illustrated the spatial dimensions of GA, provided some indication of the economic activity involved and uncovered a social trend of increased aircraft ownership that pointed towards a dispersal of aircraft to smaller sites. This latter point was felt to have significant implications for aerodrome operators and planners alike. The GA industry was shown to be directly relevant to a small minority of employees and enthusiasts, although arguably it supported a much wider population through its emergency, transport and recreational services. The chapter also described an industry which was spatially dispersed and heterogeneous in nature. Most activity was concentrated on a fraction of the flying sites within the country, and the industry was shown to possess an economic profile that was skewed towards a small number of complex and expensive aircraft. Yet, the activities concerned were found to be intricately integrated with a numerically greater, but economically less significant, group of pilots, aircraft and flying sites; each providing activity and demand for services across a dispersed network, which supported and added to the viability of the more complex aircraft.

Based on the LPA survey, Chapter Six then focused upon 'testing out' the ESRC findings regarding GA and using the LPA survey to explore the three research hypotheses. It

highlighted confirmatory and conflicting aspects between the ESRC survey and this research. The response rate from the LPA questionnaire, when analysed by aerodrome category, was itself revealing, suggesting planners were generally unaware of many small GA sites. Using the LPA framework developed over preceding chapters, it was possible to disaggregate the input-output-outcome process relative to an LPA's organisational culture. Inferences were drawn from the statistical correlations found, and in particular, gaps were noted in the process. These were between understanding guidelines, and supporting that understanding through organisational beliefs and between the actual built environment, and the perceptions held by planners about that built environment. These disparities were explored during field visits to twenty-six aerodromes and five local authorities and the findings were described in Chapter Seven. It was subsequently concluded, at least in terms of the GA guidelines tested, that the strategic implementation process was ineffective in encouraging local authorities to take a more considered view regarding the needs of GA. Specific conclusions were reached about the relationship between GA and the planning process. After reflecting upon the balance between strategic and local forces, four broader issues concerning planning and planning reform were identified, which were thought to have implications beyond the narrow confines of general aviation.

The following will now discuss the four issues identified in Chapter Seven in greater detail, from a perspective of current and future planning reform. Subsequent sections will then attempt to draw all the threads within the thesis to a close, not only revisiting the two research questions but also reflecting on the methodology used and highlighting the research contributions made research and areas for possible future research.

8.2 Identified planning issues

The preceding chapter selected from a 'vortex' of concerns which had been discussed, four broad planning issues; improving *participation and communication*, choosing between *conflicting interests,* strengthening *strategic direction* and changing *planning's culture*. Although they were recognised to be interrelated, none the less they were disentangled and suggested as possible ways of reducing strategic-local tensions, through rebalancing the relationship between the strategic and localised levels of planning. Chapter Seven had concluded, at least for GA, the balance favoured local over strategic concerns, by an emphasis on the particularities of local situation and the protection of the *status quo*. It is not, however, suggested these were the only broad issues facing planning, but it was felt they were the ones best supported by the case study and so best understood by the researcher. Each issue will be discussed in terms of how it was identified from the case study, the extent earlier chapters had located it within the literature (therefore suggesting it may have implications for other planning situations), and how any findings might relate to future planning reform.

Participation and communication

The significance of participation and communication became particularly clear during the field visits. Chapter Seven described, how at first, there appeared to be no clear reason why planning decisions varied from one site to another, often within the same district. However, the field visits revealed sites, which had been refused planning consent or had conditions of use applied, were also associated with a history of public complaints and objections. Only by stepping back from the specifics of individual cases, and looking at similar situations where there had been no record of public disquiet, despite intense activity or significant development, was a view formed that public objections *were probably a response to change, rather than a reflection of absolute impact levels.* In some cases the change occurred because the site proposed or did something different, in others it was said to have been caused by newcomers to the area. At the other end of the spectrum, examples were given where the proactive attitude of site operators had achieved good community relationships and enabled their aerodromes to flourish. Consultative committees were established by some, whilst others ensured local councillors were invited to events and complaints were dealt with effectively. In terms of local plans, less than half of LPAs included a reference to GA in their plans, and only 60% of Category A, B, C, and D operators regularly took part in the consultation process, except for those instances when a plan was proposed that was seen as detrimental to flying. In summary, the case study material suggested the level of participation and communication in the affairs of GA sites was highly localised and characterised by random, informal events, dependent upon the actions of individuals. As a consequence any effects upon the decision making process were as equally random and dependent upon individuals. They often also lacked a formal 'technical' input about what might be appropriate (in terms of improved circuit patterns, acceptable noise levels, impacts upon the network etc.) from organisations that could contribute a wider perspective, and would probably need to do so, if decisions were challenged and a planning inquiry held.

Similar threads, supporting these findings, had been evident throughout the literature. As Chapter One highlighted, the government had admitted that although the process appeared to consult, it did not engage communities and was not 'customer focussed' (ODPM, 2002). As a result the new Planning and Compulsory Purchase 2004 Act for England and Wales introduced additional measures; including Statements of Community Involvement (SCI), aimed at providing a framework for resolving shared concerns and allowing greater public involvement. In Chapter Two, the thinking that underpinned the changes was examined in terms of the pressures for greater participation. This was most clearly articulated in the UK by Healey's call for 'communicative' or 'collaborative' planning (Healey, 1998: 1-21), but also elsewhere in Europe it was embodied in the sustainability agenda and the ESDP which included consensus building principles (Albrechts *et al*, 2003: 115). Cullingworth and Nadin (2006: 436) gave credit to the work of Healey and others in encouraging community level democratic renewal, which had resulted in a greater emphasis on community involvement in the 2004 Act. Healey saw the development of British planning shaped by the regulation of property rights and discourses about place making which she felt should move towards a

collaborative, multi-stakeholder consensus as a means of improving decision making. Her ideas were influenced by Habermas and Giddens (Healey, 2003: 106) and concepts of a rational society constructed of free communication, where ideas were judged on their merits and unaffected by the ideology of others, such that communication was not dominated but liberated (Ritzer, Goodman, 2004).

In Chapter Two the idea of such a dominant sociological theory of society was said to have been doubted and rejected by some sociologists (Dearlove, Saunders, 2000: 610), yet at the same time, it was noted there seemed to be both considerable agreement and disagreement about the relationships involved, such that Chapter Two found it useful to examine the role of groups in forming a pluralist, democratic consensus. It was said that the state acted to mediate between different groups, allowing each to influence decisions, but ensuring no one group dominated and that winners and losers interchanged roles on different issues (Haralombos, Holborn, 2004: 544). Different types of interest groups were discussed and it was described how empirical evidence showed 'protective' interest groups were more effective than 'promotional groups' (Haralombos, Holborn, 2004: 548), but either type could bring pressure upon political parties by providing funds and expertise or taking direct action (Gilg, 2005: 54). On the other hand it was held by Urry (cited in Haralombos, Holborn, 2004: 547), that those in power had used interest groups to give the illusion of participation, yet allowed them to create a stalemate which protected the *status quo*. The term *status quo* occurred frequently in Chapter Two and it was noted how it was often justified by 'public interest' arguments. It was suggested the 'public interest' was an elusive concept, because the general public were generally excluded from adequate representation and so it was a matter of opinion, by those in positions of power, as to what was actually in the public interest.

The changes introduced by the 2004 Act were described by Allmendinger and Tewdwr-Jones (2006: 16) as a step in the right direction; given their introduction had the potential of developing a more democratic process across the UK (*ibid*: 12). At the same time, they had doubts about the effects on planning decisions, as was mentioned in Chapter One; since they questioned if the ownership for planning decisions would improve, whether the professions wished planning's legitimacy to increase through more democratic processes and also if central government really wanted to delegate responsibility or if it might continue to feel accountable and retain control. The CPRE had previously expressed deep concerns, when the 2004 Act was introduced; saying that despite the strengthening of community involvement, the overwhelming thrust was for centralisation (CPRE, 2004). Healey (2006: 76) equally expressed concerns. She suspected those at a local level might continue to defer to higher levels, as a means of ensuring protection against legal challenges, and that planning reform may be lost when competing in other policy arenas. She was also concerned about how planning would integrate local needs with strategic issues; a point similarly expressed by the CPRE. More recent proposals to the planning process were unlikely to have calmed these concerns. As was discussed in Chapter Four, the latest White Paper has resurrected an earlier idea to transfer responsibility for the approval of major infrastructure projects from local authorities to a separate government agency, causing very strong opposition from the major

environmental groups, which have claimed the reforms amounted to a centralisation of planning and a dilution of local participation (Guardian, 2007b). Similar criticism has been expressed by planners, including the former ODPM planner Mike Ash (2007) who felt the evidence for such a change to be limited and weak.

Whilst communication and participation may be used by those with power (politicians, media, elite groups etc.) to manipulate decisions, it would also seem that the alternatives to improving communication and participation, maintaining current levels or reducing them, would be difficult to support in a modern society. Having reflected on the case study material, where planners must intervene when problems arise, communicate with a narrow self selecting sample of the public and have little guidance about what may be the appropriate 'technical' action to take, it is therefore suggested the key to improving decision making through increased communication and participation may be to provide a more structured and focussed framework for discussion. This could, for example, include increasing the involvement of special interest groups and NGOs with technical expertise, whilst also seeking a louder voice from the 'silent majority' in order to establish what was in the 'public interest'. In respect of the last point, the issue would be how to engage a wider debate and higher levels of participation against the trend of falling electoral voting. It is possible that advances in technology, allowing interactive voting and direct engagement, as currently evident in 'reality' television programmes or the experience of the 10 Downing Street website regarding road pricing, might one day assist greater democratisation, and move public debate towards Habermas's concept of free communication. However, in the meantime, it would seem further thought is required regarding how to improve the current communication and participation framework. In terms of reducing strategic-local tensions, this might infer engaging with those that directly affected by local developments, relevant special interest groups and NGOs and a wider public, in an effort to better establish what may be in the public interest.

Conflicting interests

The issue of conflicting interests was said in Chapter Two to be at the heart of planning (Cullingworth, Nadin, 2006: 1). Although often resulting in tensions between neighbours, about local interests, as identified by Vigar *et al* (2000: 8), in the context of this thesis the issue was identified in terms of how to achieve a balance between local interests and wider public, generally strategic, interests. The case study material provided examples of conflict where local interests clashed with wider interests. In some instances the conflict was focussed within a local authority, as potential conflicts of interest existed between civil ownership and civil stewardship. Other examples were provided where local interests required an expansion of city boundaries and the closure of GA sites, despite wider public interests, in this case from the aviation community, in maintaining a viable GA network. It was observed that virtually all the case study aerodromes, whether owned by councils, individuals or companies, were conceivably at risk of development pressures depending upon the balance between local public, private and civic interests. Only in a few cases, were

aerodromes formally identified, through public plans, to need protection from development based on wider public interest arguments. However, it was also clear that those wider interests were based on historical connections and not on future aviation needs. In summary, the case study material pointed towards a situation where sites were more likely to be valued in terms of their localised land-based qualities of open space, historical roots and development potential, rather than their value as a limited resource, nodes in a transport network or as unique recreational sites; which if air-born transport were to continue to evolve and expand in the future, would to be needed. As such, it was felt they exemplified the conflict between the local interests, focussed on localised impacts, verses strategic interests, based on a understanding of the wider benefits of a particular land use.

The literature recognised such conflicts, offering solutions to situations where opposing views created tensions. For example in Chapter One, when referring to the precarious relationship between city and country, it was noted Frey (2000, 13) had felt that national strategies could overcome local disagreements and resolve local tensions. Then the ESDP was offered as the solution to European tensions between economic intervention and sustainable development (Albrechts, 2001: 297), a view that was further supported in Chapter Two, by Owens (1994: 440) who described sustainability as a concept that reconciled environment and economy. Modern forms of planning, which were said to resolve conflict and reflect consensus building principles, were outlined in the same chapter, including collaborative, communicative and strategic (spatial) planning (Albrechts *et al*, 2003: 115). Terms like 'conflict resolution' and 'conflict management' were used by various writers (Gilg, 2005: 55; Thomas, 1997; Healey, 1998: 7), leading to an impression that modern planning literature generally supported the 'communicative' view, suggesting that through dialogue, discussion, reconciliation and collaboration, conflicts of interest could be resolved, overcome or at least managed, to build a rational consensus about future objectives. However, as was highlighted in the discussion regarding communication and participation, the processes by which groups and individuals might reach rational decisions were complex and open to manipulation by those with power. It was also noted in Chapter Two concerning decision making, that rational decisions were said to be less likely in public life, because public agencies sought to reconcile incompatible ends; such that uncontrolled processes operated, particularly where group decision making was concerned (Banfield, 1973: 148). In the same vein, others had difficulties with the emerging communicative view, saying it was idealistic and impractical (Gilg, 2005: 172; Tewdwr-Jones, Allmendinger, 1998). It was felt that collaborative techniques may not always be appropriate, that there were alternatives (*ibid*: 6) and that it was difficult to see how strategy might always emerge from a collective decision making process that was strictly based on Habermasian principles (Tewdwr-Jones, Allmendinger, 1998; 2002: 10). In relationship to other socio-political theories, alternatives to Habermas's view of managing conflict were discussed in Chapter Two and, as implied in the previous section concerning participation and communication, it was felt the planning process in Britain reflected a pluralist, consensual model. It was said in Chapter Two, individuals, pressure groups, developers, politicians and civil servants attempted to negotiate change though

unequal power relationships, to achieve pragmatic compromises (Haralombos, Holborn, 2004: 544) and this had led to a discussion on the need for local flexibility within British planning, the use of formalised discretionary powers and the way such powers had helped form the relationship between local and central government.

It was also put forward in Chapter Two that conflicting interests were an inherent feature of development. The field visits subsequently highlighted this through exploring situations like that found at Cambridge Airport. It appeared that contested developments would not necessarily yield to a consultative, negotiated, consensual approach, and one side or the other would often remain aggrieved. One reason why this could occur was signposted by the case study, where it was seen that the adverse effects of noise were highly localised, whereas the economic benefits were widespread. It would seem the existing process, with its emphasis on local particularities and local decision making, found it difficult to reconcile these two incongruent spatial characteristics, which might be expected to occur wherever there are contested developments. The difficulty was how to achieve an equitable standard, whereby planning decisions reflected the opinions of the full population affected by that decision. The 'communicative' way around this, as discussed earlier, would be to engage multiple stakeholders in debate and decision making; meaning those that benefit from wider impacts, just as much as those affected by the localised impacts. However, a concern remains that even with a wide input of differing opinions, compromises may not be possible, as some issues simply cannot be decided consensually by debate. It was said that in a democracy the established approach to such situations was to use majority voting, and yet with planning issues, due to the spatial dimensions involved, there are clearly difficulties in identifying those who should be entitled to vote. Locally elected representatives could act on behalf of their community, but where the impacts of a development extended beyond that community, as noted from the case study, the legitimacy of this approach might be held questionable, and result in decisions being overturned by a planning inspector taking a more detached view.

It might be assumed that a similar detached view could be formed at a higher level of government, perhaps arguing for a similar process to that found in other walks of legal and administrative processes, where difficult decisions were elevated to the next level. Yet this might be an impracticable approach if too many decisions were elevated. An alternative could be to have that next level set clear strategic direction for the lower level to execute. In England, the current process defines the next level as regional, but as noted during the field visits there were concerns that regional planning was too detached from local detail and furthermore regional government, at least in England, was unelected and therefore lacked some legitimisation. To achieve legitimacy, strategic direction would be best established by an executive body, which was both representative of the population affected by any broader spatial impacts and closely aware of any localised concerns. If it were composed of elected representatives, those local authorities affected by its strategic decisions would have little justification to challenge them. An implementing local authority would find it difficult to adjust to local demands in the face of a strategy designed to meet the interests of a wider electorate. The question is how this might be achieved? One possibility might be to establish collaborative

arrangements between adjacent LPAs to form an intermediate and elected level of planning committee, which both determined strategy and reviewed contested land-uses with a wide spatial footprint, when they could not be resolved by a single authority on its own. In such a scenario, each LPA, upon receiving or initiating a proposal, would initially need to assess its likely spatial impact and then recommend the appropriate level of approval and the stakeholders to be consulted. This approach, of reaching collaborative agreements between neighbouring authorities, or authorities sharing a common interest, has been foreseen in the recent Local Government White Paper (DCLG, 2006: 89), by its facilitation of voluntary Multi Area Agreements (MAAs) between local authorities.

Based on the foregoing, a conclusion drawn from the literature and the case study material is that it may not always be possible to resolve conflicting interests through consensual debate, and that other ways of allowing electoral voting to provide a democratic alternative should be sought; even though for practical reasons this would probably be based on voting by elected representatives. It is felt, based on the difficult problems presented by contested developments in the case study that further thought ought to be given to achieving a standard which established that planning decisions should reflect the full population affected by the decisions made. As suggested above, this might be achieved by forming collaborative planning committees, established within the MAA framework, with the power to set common strategies and approve contentious developments, across neighbouring districts; so both representing wider spatial interests by drawing upon special interest and NGO expertise as required, and being more connected with local issues than would be possible through regional unelected structures.

Strategic direction

As noted earlier, planners said they would have welcomed improved guidance, or better strategic direction, from higher levels of government concerning GA, particularly when policies potentially conflicted. However, the LPA survey and the field visits found little evidence that guidelines concerning GA were effective in determining local practice. It was felt the combination of strong local discretionary powers and weak strategic direction did little to help strategic-local tensions and that the wide spatial footprint of GA, in terms of its dispersed economic footprint and the connectivity of sites, made it difficult for planners to appreciate the implications of their decisions. Added to this, the secondary research revealed significant social trends in ownership that had implications for hangarage and the dispersal of aircraft to smaller sites. Since even the GA industry was unaware of these trends, it would be unrealistic to expect planners to take them into account, but they served to illustrate a point that there was a need to communicate national trends to LPAs and to develop national/regional strategies to manage changing events on the wider spatial scale. When asked about enhanced regional planning, which was underway following the 2004 Act, the response from planners interviewed was mixed. It was recognised a land-use like GA needed to be viewed strategically, since local authorities would otherwise judge it from a relatively narrow environmental perspective which lost sight of other needs, but it was felt regional plans would

focus on housing, employment and transport in a broad sense, and GA would remain a 'Cinderella' activity, not covered at a regional level. The message drawn from the case study material was that a clearer strategic direction, which was integrated with other policies, would not only reduce the need for local discretion, and so lessen variability in decision making, but that it was also necessary to communicate wider social trends and needs not always visible or understood by those immersed in day-to-day operations.

The literature predicted it would be difficult to establish a clear connection between planning inputs and outcomes, as discussed in Chapter Three (Preece, 1970: 59; Kingdom, 2000: 461; Gilg, 2005: 67; Cullingworth, Nadin, 2006: 8), and this was subsequently shown by the case study material. One problem identified in the literature was the multiplicity of diverging objectives, which were caused by conflicting interests, as discussed in Chapter Two (Gilg, 2005: 67; Thomas, 1997: 12; Thornley, 1993: 33). For example, it was noted that objectives for sustainability, which at first may have appeared to be well defined, were found to have 'strong' and 'weak' interpretations (Owens, 1994: 442) and that this served to illustrate that even core principles might be difficult to establish as strategic policy. The historical context of strategic planning in the UK was reviewed in Chapter Two, where it was found that the UK's instruments of strategic guidance had been relatively weak until the early 1980s, having relied upon national legislation, circulars and case law to provide a framework. The Conservatives then introduced Planning Policy Guidelines, which have more recently been recast as Planning Policy Statements. Outside of planning, the use of strategic planning techniques was shown to have a longer history, since they had been widely developed and practised by military and commercial organisations. This was described in Chapter Two in relationship to the rise of strategic (spatial) planning, a technique said to be rooted in the private sector's 'strategies and vision statement' management technique that had originating in the United States (Albrechts, 2001: 294; 2004: 744). It had then been merged with ideas of collaborative and communicative planning (Healey, 2003: 120; Abram, Cowell, 2004: 210). Although promising to provide a clearer strategic direction, based on collaborative principles, Chapter Two noted that whilst making a contribution to academic debate, it also served to expose divisions between those who favoured tight regulation and those who wished to see a more vibrant and inclusive form of planning (Allmendinger, Tewdwr-Jones, 2005: 5; Gilg, 2004: 173). The ESDP on the other hand, described as a strategic plan for the whole community (Allmendinger, Thomas, 1998: 252), has more noticeably shaped strategic thinking within the UK (Haughton, Counsell, 2004: 36). New Labour's devolution project appeared to have complemented the ESDP thinking. By causing greater differentiation across the UK, it was said to have emphasised the need to replace the centralised planning structure with an approach more able to foster regional competitiveness (Allmendinger, Tewdwr-Jones, 2006: 16); essentially by moving away from traditional land-use planning to a more progressive model of spatial planning. It was also noted, a consistent thread running through the development of new forms of spatial planning, was that of integrating policies. Healey raised this in relationship to the two streams of UK planning regulation mentioned previously (1998: 11; 2003: 117) in the belief they were most effective when integrated. Similarly one of

the key purposes of the ESDP has been said to be integrating policy across different sectors of activity (Cullingworth, Nadin, 2006: 88), and when Friedmann (2004: 52) examined strategic (spatial) planning, he concluded it was about a comprehensive, integrated long-range planning for territorial development; although he subsequently commented it seemed to contain the cherished dream of planners - the 'Utopian' integration of everything.

The focus on policy integration may be seen as a response to the issue of conflicting objectives noted earlier, with a purpose of reaching decisions through participation and then communicating in an effective manner, as also discussed. However, whilst the methodology of strategy formulation has proven effective for military and commercial organisations there may be a question as to how applicable it is to planning, or indeed similar government functions. A concern, based on reviewing the case study material and the disconnection in the input-output-outcome process, is that the discretionary based administrative process developed for planning and other government functions, differs significantly from the direct line management authority found in military and commercial organisations. In the latter, senior executives set the overall strategy and subordinate units are required to follow it. If circumstances require an adaptation, then it must be approved by the executive, but most importantly, outcomes are frequently compared to strategic objectives, and appropriate action taken, to amend the strategy or review the careers and personal remuneration of those responsible. The lack of a strong strategic feedback loop was evident in Chapter Three, when discussing possible planning models, yet as recognised by the LPA model that was developed in the same chapter, such feedback must occur at various levels. However, Chapter Eight and Chapter Seven showed little evidence of it occurring at a local level, suggesting that at most, only a weak feedback process takes place between LPAs and central government. This lack of a strong feedback, from results to strategy, would seem to most clearly differentiate planning from military and commercial organisations. This was illustrated by the case study material, where there were considerable difficulties in relating planning strategy, in terms of it being measurable and time bound, to planning outcomes. Planning would seem to have a 'weak' interpretation of strategic planning, where strategic direction is provided in the form of 'guidelines' or 'statements' rather than clear objectives. In part, the earlier suggestion arising from the discussion of conflicting objectives, to establish intermediate planning committees from neighbouring LPAs, which both set collective strategies and decide upon contested developments, may be one localised way of bringing together those making strategy with the consequences of their plans.

Based on the case study material and preceding chapters, it is felt there may have been too much emphasis placed on the merits of strategic planning integration, rather than understanding how it might be achieved without the measurable feedback required of 'strong' strategic planning. Assuming current reforms succeed in integrating planning strategies with other policy fields which may possess more measurable and significant objectives, a resulting concern is that there could be a weakening of planning's strategic input to the national arena. This point echoes Healey's earlier concerns, as mentioned in the communication and participation discussion, that planning strategies may be subjugated and constrained when

held against other policy arenas which also compete for central funding. If so, the prospect may be a more rigid strategic approach to planning than the flexible one which has evolved, as wider public interests beyond planning and centralised fiscal control may override the current agenda. It is therefore concluded that more attention should be given to making strategic processes effective, rather than holding that planning is in some way different from other policy fields and that a weak interpretation of strategic planning may be complemented by a strong use of local flexibility. A more effective strategic process, with more measurable objectives and a tighter feedback between policy and outcome, may require compromises concerning local flexibility, but it would be shaped by planners and be less vulnerable to unbalanced integration with other policy fields.

Planning's culture

The role of a LPA's organisational culture was theorised from the literature review in Chapter Three, where it was held to play a vital part in connecting strategy with planning outcomes. In a limited sense the LPA survey confirmed this role, suggesting the 'common beliefs' held by planners were associated with some planning decisions. But, there were also gaps in the predicted relationships, particularly linking the views of planners with the built environment, and a significant variability in planning decisions. The field visits suggested this variability was often associated with public objections and protest, leading to a conclusion that the focus on aerodromes had been highly localised, underwritten by either a concentration upon noise effects or the development potential of particular sites, such that it favoured the maintenance of the *status quo*. One example, that of Cambridge Airport, particularly illustrated the way public pressure augured towards the *status quo*; supporting the existence of the site on one hand, then resisting changes that would have secured its future. Faced with unpredictable public reactions, the impression gained was that planners would welcome additional guidance and support from higher levels of government, but that in its absence other policy directives would continue to prevail, due to local pressures, the relatively low priority given to GA matters and a general belief that flying was not compatible with environmental objectives. Consequently, it may be drawn from the case study material that local planning's culture was found to be generally reactive, at least with regard to GA, responding to public concerns and accommodating government guidelines, whilst not necessarily providing any leadership or taking the initiative to improve the built environment.

As noted in Chapter One, Cullingworth (1997: 958) had clearly reached similar conclusions about planning's culture, when he said planning issues were dealt with on an *ad hoc* basis and plans were rarely proactive in nature. He largely blamed the government of the day, saying it was paralysed through fear of adverse reactions to positive policies and that instead it should be an initiator of plans for development. The work by Healey and others, discussed previously and outlined in Chapter Two, may be taken as a response to such criticisms and a recommendation to improve planning's culture through improved communication practices. Chapter Three, built on the sociological, political and behaviourist dialogue of Chapter Two, developed a model of planning's culture within a local authority,

which recognised the impact of that socio-political environment. Williams *et al* (1996: 14) had described 'culture' as the commonly held and relatively stable beliefs, attitudes and values that existed within an organisation, whilst Cullingworth and Nadin (2006: 80) referred to it as the 'informal' workings of planning and Gilg (2005: 35) said it was the 'case lore' or the received wisdom from colleagues and training courses. Evans (1991: 866), through his analysis of housing development during the 1980s, served to highlight the existence of a *status quo* culture within planning, whereby those in opposition exercised their rights, placed pressure on councillors and attended inquiries, whilst those that might have benefited from the proposal where unaware of it and so could not support it. Organisational behaviourists and sociologists also recognised the ability of political processes to favour the *status quo*, through a common form of decision making, termed 'bounded rationality' which involved finding solutions that were 'good enough to be acceptable' (Anderson and Kyprianou, 1994: 189). In recent decades planning has been accused of protecting the *status quo* (Healey, 2003: 105). As was discussed in Chapter Two, for a while it seemed the Thatcher government was determined to overcome conservatism (with a small 'c') by introducing a market philosophy which was intended to loosen the hold of local authorities on land needed for development, by limiting their discretionary powers (Booth, 2003: 136). Having traced the historical roots of planning, from the Middle Ages and the early use of the public interest concept and the use of discretionary powers, the Thatcher years were used to explore the role of discretionary powers in the central-local relationship. Discretionary powers were seen as a necessary flexible negotiating tool, because those in high office were unable to predetermine all eventualities. Equally, it became a bureaucratic device allowing some rules to be enforced and others discarded (Allmendinger, Thomas, 1998: 13), which as a legally enshrined feature of Britain's administrative culture, bound planning to a unique power relationship between central and local government. It was consequently felt that Britain's planning culture was deeply rooted in British political, legal and administrative history, through its reliance upon the concept of the public interest and its use of discretionary powers; such that it appeared to be noticeably more politicised than in many other industrialised countries.

Since Cullingworth's critique of planning in 1997, the government has introduced the 2004 Planning and Compulsory Planning Act for England and Wales, which was said to herald the education of a new generation of planners in a new culture (ODPM, 2005). This has since been supported by a revised PPG1, in the form of PPS1, that emphasised planning should be a positive, proactive process with sustainable development at its heart. The introduction of new White Paper reforms suggested by the Barker Review (2006) and related reviews by Eddington and Stern (CLG, 2007b), only two years after the introduction of a 2004 Planning and Compulsory Purchase Act (which had claimed *it* would bring about a 'fundamental' change), suggests planning and its culture has remained highly political in nature. If the new reforms succeed in resolving the issues central government has faced over large scale projects, they may reduce some of the pressures driving central government's reform of planning, leaving the existing local planning process relatively unchanged. For example, despite the wording of PPS1, it is not clear if politicians, developers and representatives of

special interest groups that work with planning, would so readily adopt a positive, proactive stance. It could be argued they may prefer to maintain the existing socio-political environment which has been established over many decades and from which many have benefited. If so more reforms and resources may be required, particularly as was established in this thesis, because the forces maintaining the *status quo* are time-honoured and by definition resistant to change. Furthermore, it is felt that recent proposals to streamline major projects and substantially increase the number of houses built, will do little to address the underlying *status quo* culture, and they may even make the situation worse. The concerns are that the new reforms may take the pressure off national government to fulfil the promise of earlier ones (including the education of a new generation of planners in a new proactive culture) and that at the other extreme, local planning may become more introspective and seek to exercise control in areas untouched by increased centralised power. It is therefore thought that further attention should be given to supporting local planners in the face of increased centralised control. A possible reform, that could provide a more uniform approach to planning, resist introspection and offset local pressures to maintain the *status quo*, might be to consider the realignment of the planning function in organisational terms. The current fragmentation of planners, employed by local LPAs supports a localised approach to planning which is subjected to local political realities. Whilst local planning committees, responsible for decision making, plainly need to be legitimised through local elections, there may be an argument for planning officers to be more closely aligned with county or regional planning structures. This could provide a supportive professional organisation enabling uniformity of practice and procedures and career opportunities. An example of such a structure may be found in the police, where county and regional forces service local districts and work with local communities, yet report to a functional structure.

In the case study, planning's culture was found to be reactive and ineffective in implementing government strategic guidelines, at least concerning GA. Others have noted planning's reactive culture and called for radical change. But, they had perhaps not anticipated the government's radical response to take away control for strategic projects from local authorities. The danger is that these radical changes might exacerbate existing local-strategic imbalances. It is therefore felt that the remaining local authority based planning process may require compensatory adjustments, equally representing radical change, one of which could be to alter the current organisational structure, as suggested, towards a more functional structure, reporting at a county or regional level.

Planning reform conclusions

The four broad planning issues, which were felt to influence the delicate balance between strategic and local interests in Chapter Seven, have been examined in the foregoing to see if they had any implications for planning reform. It was concluded that in a modern society the only way forward was to improve *participation and communication* through a more structured and focussed framework, yet the difficulty was how. Modern technology might ultimately assist the democratic ideal, but in the meantime it was felt further thought should be

given towards engaging those directly affected by local development, relevant special interest groups / NGOs and a wider public, in an effort to better establish what may be in the public interest.

The topic of *conflicting interests* highlighted a belief that participation and communication alone would not necessarily resolve difficult issues through consensual debate and that electoral, majority voting was also needed as a practical means of arriving at democratic decisions. Again the difficulty was how this might be achieved. It was suggested, since contested developments may be characterised by wide spatial footprints, each LPA, upon receiving or initiating a proposal, could initially assess its likely spatial impact and then recommend the appropriate level of approval and the stakeholders to be consulted. Under this scenario, collaborative arrangements between neighbouring LPAs, established within the MAA framework, were offered as a way forward. They could provide coverage of a geographical area that was more appropriate than that covered by either local or regional planning. Under such agreements, LPAs could form an intermediate and elected level of planning committee charged with both determining strategy and reviewing contested land-uses for a number of LPAs. Members could legitimately represent wider spatial interests, be more connected with local issues than possible through unelected regional structures and yet able to draw upon expertise from special interest and NGOs.

Strategic direction was clearly an important means of coordinating government policy and achieving an equitable uniformity of planning regulation, yet it was felt the emphasis on strategic planning integration overlooked the reality that it was difficult to measure the effectiveness of planning strategy and so provide the tight feedback loop theoretically needed to adjust strategy with changing circumstances. Integration was said by Friedmann (2004: 52) to be a 'Utopian' dream of planners, but it was concluded that integration with other policy fields may lead to a more rigid approach to planning than the flexible one developed to date. It was felt wider public interests and centralised fiscal control may dominate, such that planning strategies will be subjugated and constrained when held against other policy arenas. Current White Paper reforms, aimed at separating major infrastructure projects from the traditional planning process, may add to this situation causing a weakening of planning's strategic role in national policy. It was therefore concluded that more attention should be given to making strategic processes effective, rather than accepting that planning is in some way different from other policy fields. A more effective strategic process, with more measurable objectives and a tighter feedback between policy and outcome, may require compromises concerning local flexibility, but it would be shaped by planners and be less vulnerable to inappropriate influence from other policy fields.

The implications of the White Paper proposals, to separate strategic projects from main stream planning, were also discussed when considering *planning's culture*. The case study had suggested planning's culture was reactive and ineffective in implementing government strategic guidelines, and the literature review demonstrated how it was deeply wedded to Britain's political, legal and administrative history. It was felt that the recent

proposals to create a two-tier process, would do little to address the *status quo* culture that has developed at a local level, since they may take the pressure off the government's promise to educate a new generation of planners in a new proactive culture, and at a local level, cause planning to be more introspective and ready to exercise control in the areas untouched by increased centralised power. Consequently it was suggested the organisational structure of the local planning function may need reform, perhaps towards a more functional structure reporting at a county or regional level.

Taken together, the examination of these four inter-related issues has provided a cohesive view of what the research indicates about possible future reforms concerning strategic-local tensions. Participation and communication could be improved if they better reflected the spatial impacts of any proposal, and to this end appropriate NGOs and special interest groups could be involved. Yet, recognising not all conflicts may yield to consensual techniques it may also be worthwhile exploring the use of majority voting based on a wider spatial dimension than the planning committee of single LPAs. Elected representatives could be drawn from adjacent local authorities to form a committee that would both set strategy and consider contentious planning applications. Such committees could manage issues that extend beyond local districts, helping to strengthen the weak feedback loop found in the case study material by reviewing strategy against outcomes. The existence of an alternative approval process, within the MAA framework and located between local and regional authorities may provide a means to offset a potential weakening of the role of planning in strategic issues if the government's current White Paper proposals are enacted, but equally other reforms may be necessary. A change of the current local authority based reporting structure to a functional structure for planners was suggested as another means of strengthening planning, particularly local planning. A functional structure would facilitate the uniformity and vision needed to overcome the apparent localised *status quo* bias found during the study, whilst providing a more supportive professional foundation for improving planning's culture.

8.3 Research questions revisited

This section attempts to answer the two research questions posed at the beginning of this thesis, in Chapters One and Two. Chapter One explained the background to the first question which arose from a preliminary literature review during the early stages of the research. The question posed was:

Will future planning legislation and processes provide a more effective, less conflict laden process for implementing national and regional strategic objectives at a local level?

This basic research question was posed with the 2002 Green Paper reforms in mind, not knowing that the proposal to separate approvals for major infrastructure projects from the local government process would be dropped in the 2004 Act, and then resurrected in the latest White Paper. In terms of effectiveness and based on the foregoing analysis, it would seem that the proposal to separate major infrastructure projects may prove to be more efficient than

the local authority based route, but not necessarily more effective than past practices. The time taken to reach decisions about the location and form of new projects may be reduced because consultation processes will be shortened, but a concern would be that a broad alliance of the electorate may feel disenfranchised, and they may not readily accept the decisions reached, causing additional delays during the implementation phase. Other reforms, that were introduced by the Planning and Compulsory Purchase Act in 2004, are still in the process of being introduced, but whilst it could be said to be too early to pass judgement, the research shares some of the concerns expressed by other writers, for it is not clear that the reforms have been as 'fundamental' as they were claimed to be, or that the planning cultures may change as easily as was thought. This view has been taken because, as has been argued in this thesis, the underlying causes of conflict are deep rooted and closely related to Britain's politicised planning process; which attempts to achieve flexibility through the use of local discretionary powers whilst also trying to maintain a highly centralised form of national government. Reforming such a process may need more than the introduction of enhanced planning documentation as introduced by the 2004 Act. Although this thesis has expressed concerns about the latest round of reform, the 2007 White Paper might be said to provide a clear indication of the extent of reform that government believes is required, through its genuinely fundamental review of the process for major infrastructure projects.

The second, question that was refined and developed in Chapter Two based on a more extensive literature review, asked:

Are centrally issued guidelines an effective means of implementing national and regional strategic objectives at the local level or has Britain's unique emphasis on formal local discretionary powers produced a process which too often supports local interests over those of the wider public and a culture that current planning reforms will find difficult to overcome?

As was concluded in Chapter Seven, based on the experiences of GA, centrally issued guidelines do not appear to be an effective means of implementing national objectives at the local level. It was also argued that Britain's unique approach to land-use planning, with its combination of strong local discretionary powers and a weak strategic direction had done little to help the strategic-local tensions experienced between GA businesses/users and local residents/planners. Furthermore, as was highlighted by the answer to the first question, the degree that Britain's planning culture has been deeply rooted in British political, legal and administrative history, through its reliance upon the concept of the public interest and its use of discretionary powers, suggests reform will be difficult. The current White Paper reforms illustrate one approach, to circumvent the existing process in order to achieve national objectives deemed of strategic importance by the government. But as suggested earlier, the concern would be that this may allow the government to be distracted from future reforms of the existing process, or at best allow it to relax earlier reform programmes, so making it less likely current reforms will overcome the issues recognised by the government at the time this research was initiated.

8.4 Closing remarks

This final section takes a reflective view of the journey undertaken. The previous section sought to answer the two questions raised at the beginning of the thesis, finding serious issues with the current process and raising concerns about the latest round of reform proposed by the 2007 White Paper. In the course of answering the questions, this chapter has also touched upon possible ways the process may be improved. Each suggestion was underlined by a belief that spatial planning needed to be legitimised and supported by the involvement of all those affected by planning decisions; whether through direct participation, majority voting by elected representatives, seeking ways to strengthening the strategic process relative to other policy fields or reorganising the planning professionals on a functional basis that reflected the wide spatial impact of planning decisions.

The conclusion outlined flowed naturally from the research's analytical framework, yet it might be said the answers to the research questions were anticipated from the beginning. The following will discuss this point, before highlighting what has been felt to be the contribution made by this research and outlining possible opportunities for future research.

Reflections on the methodological approach

As was discussed in Chapter Three, it was hoped that the process adopted by this research, of investigating a relatively narrow aspect of planning, using a distinctive but 'revelatory' case study subject, which was understood by a researcher with 'ease of access', who applied a multi-method approach based on a substantive literature review, would enable 'problems' to be distinguished from broader, more significant issues. Whilst it is for the reader to decide if this methodological approach was successful, the writer has reflected upon the experience gained.

As stated in Chapter One, the research was from the beginning closely connected with GA and this undoubtedly was the underlying feature that shaped its direction. Although its GA involvement supported an 'ease of access' argument, the connection also brought with it issues, particularly the lack of previous research and scarcity of information about the case study subject. As a consequence, much time was devoted to understanding the case study subject and conducting secondary research to describe the diversity and complexity of land uses involved; 'ease of access' could not provide information which did not exist. Equally, whilst the case study subject proved to be distinctive (in that it was bounded) and 'revelatory', it was sometimes difficult to know the extent that any findings could be applied to other land uses. In this sense, the use of the experiences of one small industry, which was tied into a 'testing out' of earlier research, proved to be a limitation on the ability to generalise. If GA had not been self selected, would it have been chosen to test the effectiveness of the planning process with regard to strategic-local tensions? Clearly, it would not, as many other approaches could have been considered. Yet at the same time, GA represented an under-researched field and one that had been described as a 'microcosm' of planning activity (Gallent et al, 1999: 13). Consequently, the results of secondary data analysis were felt to have added significantly to the robustness of this and any future research.

In Chapter One this latter view was supported, as it was argued that GA appeared to be an example of a case study that possessed 'typicality', in that findings of the ESRC research could be related to wider issues. However, this did not necessarily mean that all findings might be generalised to other applications, only that general findings elsewhere have resonance with the case study. Hence, it is not surprising that the findings in this thesis are largely confirmatory of observations made by others. The unique aspects of British planning, in terms of discretionary powers, public interest arguments and relationships between local and central government, for example, are well documented. Equally, during the formative stages of the research, there was an ongoing debate about planning reform, which involved criticism of past practices and the call for a more rounded approach to planning.

So, to return to the earlier point when it was said the answers to the research questions may appear to have been anticipated from the beginning, the case study material indeed proved to be confirmatory, 'typical' of experiences elsewhere and therefore, through osmosis, anticipated in the research questions asked. It is felt the value of the research, however, lays not in the general confirmation of observations by others, but in its detailed approach, a point that will be expanded in the next section.

Contributions made by this research

Given that little research had been directed at GA in the past, this thesis, by analysing secondary datasets and conducting national surveys, clearly represents a major contribution towards documenting the industry in terms of its infrastructure and relationships with planning. Beyond this contribution, it is held the research has developed several interesting methodological approaches and proposed a number of ideas concerning planning reform.

Three methodological approaches deserve to be highlighted. Firstly, the inherent 'bias' of the researcher was exploited to reveal information that would not have been uncovered by an 'outsider'. This was exemplified by discovering social trends in aircraft ownership and developing a spatial mapping of aircraft activity, both of which subsequently proved to be very relevant to the strategic planning of the industry. The approach of taking a government dataset, the aircraft register, and merging it with a special interest dataset, provided by aircraft spotters, also reflected how 'insider' knowledge could be exploited in an otherwise unforeseen way.

This 'insider' approach also enabled the complex array of aerodromes to be classified, since it required a technical understanding of the parameters involved. But, although related to the classification of aerodromes, the second methodological approach worth highlighting made a more general contribution. This was because it built upon a validation methodology established by others. The grouping of aerodromes into categories was principally executed by using 'Cluster Analysis', yet since there were anomalies, the results did not at first completely satisfy a review by 'industry experts'. The statistical analysis did not make cohesive sense. Faced with a similar situation, other researchers (Bibby,

Shepherd, 2004) had simply reclassified the anomalies based on input from others. But in this research, all the possible anomalies were not known, since the industry experts were not, and could not, be aware of all the sites involved. This situation was overcome, as described in Chapter Four, by using the expert review to establish 'benchmark' aerodromes. Adjustments were then made to the weighting of the 27 parameters involved until these benchmarks were relocated by the cluster analysis software into the appropriate categories. The underlying assumption was that by correctly re-classifying benchmark cases, using a statistically driven process, the balance of sites, which could not be physically validated, would also, be rationally categorised. Some assurance for this assumption was provided later when twenty six aerodromes were visited during the field study phase, none of which were incorrectly categorised.

The third methodological approach that this research developed was to disaggregate the traditional sequential input-output-outcome model in terms of its interaction with planning's organisational culture. Previous research had suggested it was too simplistic to expect a direct relationship between planning's input and outcome, but by disaggregating the process it was possible to explore why there might not be a strong relationship. The direct process was viewed in terms of a collection of direct, indirect, vertical and horizontal relationships. Inferences were drawn from the statistical correlations found and gaps noted in the relationships; which were then explored during field visits and subsequently provided insights into four of the broad issues to be found in planning. It was felt that, faced with the difficult issues identified by other researchers, this methodological approach of disaggregating the traditional view of a guideline implementation process into direct, indirect, vertical and horizontal relationships, between the formal process and the informal workings of the supervising organisational culture, has made a useful contribution to the understanding of planning's treatment of strategic-local issues.

Finally, the use of traditional research methods, when coupled to these three contributing methodological approaches, resulted in a number of ideas concerning planning reform, which have been described in this chapter. Each was underlined by a belief that spatial planning needed to be legitimised and supported by the involvement of all those affected by planning decisions. Two of these were felt to make especially noteworthy contributions to the planning debate. Firstly, the idea of creating collaborative planning committees between adjacent LPAs with the power to set common strategies and approve contentious developments, across neighbouring districts, where the spatial impact clearly extended beyond the boundaries of the host LPA. Such committees, which would be consistent with the wider objectives of encouraging Multi Area Agreements, could provide an intermediate level between local and regional planning that represented wider spatial interests and was more connected with local issues than would be possible through regional unelected structures. Secondly, it was suggested, as a means of strengthening planning, that there should be a change from the current local authority based reporting structure to a functional structure for planners. It was argued a functional structure would facilitate the uniformity and

vision needed to overcome the apparent localised *status quo* bias found during the study, whilst providing a more supportive professional foundation for improving planning's culture.

Opportunities for future research

In addition to the specific recommendations outlined in Chapter Seven for those involved in GA, the following proposes several broader planning research opportunities which flow from this chapter. Firstly, it is hoped others, particularly those with an organisation behavioural and planning background, might explore the guideline implementation process using the concepts developed by this thesis of direct, indirect, vertical and horizontal relationships, but in a way that was not necessarily tied to 'testing out' previous research. That is, they need not attempt a single industry view of the process, or adopt a postal survey of local authorities. It may be that in-depth interviews of key stakeholders, local and regional planners, councillors and applicants would be more appropriate. However, the disaggregated approach is recommended given, as supported by this research, that a direct relationship between input and outcome was indeed a simplistic view.

Secondly, referring back to an earlier point raised when discussing participation and communication, there would appear to be a need for more research into how a more structured and focussed framework might be developed, which could more effectively involve and seek opinions from all actors. Future researchers may wish, for example, to explore the suggestion for collaborative planning committees to manage land uses with a wider spatial footprint, with its implied process that all planning applications might first be evaluated by local planners before being assigned to an appropriate planning committee.

Finally, picking up on an earlier point arising from the findings concerning strategic direction, it is felt more research should be conducted into how feedback from local planners to central strategists might be strengthened. In short how planning's weak interpretation of strategic planning may be strengthened. A stronger feedback process in the otherwise sequential input-output-outcome model would improve the effectiveness of the strategic planning process. The suggestion to reorganise planners into a functional structure, as a means of improving communication between planning levels, may be one approach to be considered by future researchers. As was noted previously, a more effective strategic process may require compromises concerning local flexibility, but since it could be more closely shaped by the planning profession, this aspect of self determination, from the view of an 'insider', would make it an interesting topic to study.

References

A4A (2002) *Action for Airfields,* downloaded (15th March 2002) at www.airfields.org.uk

Abram, S., Cowell, R. (2004) *Learning Policy - the Contextual Curtain and Conceptual Barriers*, European Planning Studies, Vol. 12, no. 2, March.

ADEA (2006) *Lobby Letter*, Air Display Association Europe, Dunston, Lincoln, downloaded (26th April 2006) at www.adae.co.uk

AFE (2002) *UK VFR Flight Guide*, Airplan Flight Equipment Ltd., Compiled by L Southern, Camber Publishing Ltd.

Air-Britain (2005) *Overseas Aircraft – estimate based on previous registers*, Email to T. Lober from B. Wormersley dated 22nd November 2005.

Air-Britain (2006) *Membership Estimate*, Email reply from Graham Slack, dated 18th July.

Albrechts, L. (2001) *In Pursuit of New Approaches to Strategic Spatial Planning*, A European Perspective, International Planning Studies, Vol. 6, No. 3, 293-310.

Albrechts, L. (2004) *Strategic Spatial Planning Re-examined*, Environment and Planning B: Planning and Design, 2004.

Albrechts, L., Healey, P., Kunzmann, K.R., (2003) *Strategic Spatial Planning and Regional Governance in Europe*, APA Journal, Vol. 69, No.2, Spring.

Allmendinger, P., Thomas, H. (1998) *Urban Planning and the British New Right*, Routledge, London,

Allmendinger, P., Tewdwr-Jones, M. (2002) *The Communicative Turn in Urban Planning: Unravelling Paradigmatic, Imperialistic and Moralistic Dimensions*, Space & Polity, Vol. 6, No. 1, 5-24, Carfax Publishing.

Allmendinger, P., Tewdwr-Jones, M. (2006) *Territory, Identity and Spatial Planning*, in Territory, Indentity and Spatial Planning; Spatial governance in a fragmented nation, Edited by Tewdwr-Jones, M. and Allmendinger, P., Routledge, Oxon. 3-21.

Anderson, A. H., Kyprianou, A. (1994) *Effective Organisational Behaviour*, Blackwell, Oxford.

Anderson, D. (2005) *Aerial Photograph of Compton Abbas*, Wednesday 13th July, UKGA, downloaded (18th May 2006) at ukGA.com/aerodrome/content.cfm?aerodromeId=1109&contentId=4823

AOPA (1992) *General Aviation*, a case for Government Policy, AOPA, London.

AOPA (1995) *Economic Employment and Social Survey of UK Airfields*, compiled by Bruford, D. and researched by Vallance, M., Nicholls, P. H., Serwan M-J-Baban, Blake R.N.E., Ogilvy, D., Campbell, R., Gore, R.,

AOPA (2002) *Guide to obtaining community support for your local airport*, downloaded (8th June) at www.aopa.org/asn/apsup03.html

Ash, M. (2007) *Former chief planner pans White Paper*, Planning, 3rd August.

ASO (2006) *The Aircraft Shopper Online*, ASO.com, downloaded (20th April 2006) at www.aso.com

AVBuyer (2006) *The Aircraft Market Online*, AVBuyer.com, downloaded (20th April 2006) at www.avbuyer.com

Ball, A.R., Peters, B.G. (2000) *Modern Politics and Government*, 6th Ed., Macmillan, London.

Banfield, E.C. (1973) *Ends and Means in Planning*, A Reader in Planning Theory, Ed. Faludi, A., Permagon Press, Oxford.

Banister, D. (2000) *Sustainable urban development and transport- a Eurovision for 2020*, Transport Review, Vol. 20, No. 1, 113-130.

Barker, K. (2006) *Barker Review of Land Use Planning: Final Report*, downloaded (5th February, 2007) at www.hm-treasury.gov.uk/independent_reviews/barker_review_land_use_planning/barkerreview_land_use_planning_index.cfm

Batty, J. (1970) *Management Accountancy*, 3rd Ed., MacDonald and Evans Ltd., London.

Baxter, M. (2006a) *Active UK Pilot Population*, email to T. Lober dated 20th February 2006

Baxter, M. (2006b) *Re Active UK Pilot Pop*ulation, email to T. Lober dated 23rd March 2006

BBGA (2005) *General Aviation Industry Directory*, British Business and General Aviation Association, Brill, Buckinghamshire

Beierle, T.C., Konisky, D.M. (2000) *Values, Conflict, and Trust in Participatory Environmental Planning*, Journal of Policy Analysis and Management, Vol. 19, No. 4., pp. 587-602. J. Wiley & Sons.

Besso (2006) *FW GAAC Enquiry*, Email from Hazel Fackerell, Besso, to T. Lober dated 16th Feb. 2006.

BGA (2006) *Telephone 01162531051 enquiry 18th July*, British Gliding Association, Leicester.

BHPA (2006) *Telephone 01162611322 enquiry 18th July*, British Hang Gliding and Paragliding Association, Leicester.

Bibby, P., Shepherd, J. (2004) *Developing a New Classification of Urban and Rural Areas for Policy Purposes – the Methodology*, downloaded (8th June, 2005) at www.statistics.gov.uk/geography/downloads/Methodology_Report.pdf

Blake R, (1989) *The development of military and civil airfields in the UK since 1909*, PhD Thesis, University of London.

Bloomfield, A. (2006)*Re: Conditions of use*, Email sent to T. Lober, dated May 19th.

BMFA (2006) *Welcome to the British Model Flying Association*, downloaded (26th April, 2006) at www.bmfa.org/index.html

Boddy, R. (2005) *Support grows for wind farm policy*, Planning, 11th February.

Boyne, G.A. (1998) *Public Services Under New Labour: Back to Bureaucracy?* , Public Money & Management, July-September, 43-50.

Boyne, G.A. (2001) *Planning, Performance and Public Services*, Public Administration, Vol. 79, No.1, 73-88.

Boyne, G.A. (2002) *Concepts and Indicators of Local Authority Performance: An Evaluation of the Statutory Frameworks in England and Wales*, Public Money & Management, April-June, 17-24.

Boyne, G.A. (2003) *What is Public Service Improvement?*, Public Administration, Vol. 81, No. 2, 211-227.

Boyne, G.A. (2004) *A '3Rs' Strategy for Public Service Turnaround: Retrenchment, Repositioning, and Reorganization*, Public Money & Management, April, 97-103.

Booth, P. (2003) *Planning by Consent: The Origins and Nature of Development Control*, Routledge, London.

BPA (2006) *Telephone 01162785271 enquiry 18th July*, British Parachuting Association Ltd., Leicester.

Bramley, G., Lambert, C. (2000) *Planning for Housing,* in Modern Politics and Government Ed. Ball, A.R., Peters, B.G., 6th Ed., Macmillan, London.

Brooks, R. (1998) *Sussex Airfields in the Second World War*, Countryside Books, Newbury, Berks.

Brundtland, G. H. (1987) *Our Common Future: Report of the World Commission on Environment and Development*, A/42/42, World Commission on Environment and Development, UN downloaded (8th June 2006) at www.un-documents.net/k-002988.htm

Bryman, A. (2001) *Social Research Methods*, Oxford University Press, Oxford.

Bulmer, H. (1969) *Symbolic Interactionism, Berkeley, University of California Press.*

CAA (2003) *Cap 738 (Safeguarding of Aerodromes)* February 2003, downloaded (15th April 2006) at www.caa.co.uk/default.aspx?categoryid=375&pagetype=90&pageid=2965

CAA (2004) *Age Profile of Licence Holders, Valid at 01 April 2004*, Civil Aviation Authority, London, downloaded (26th April 2006) at www.caa.co.uk/default.aspx?categoryioxfordd=175&pagetype=68&groupid=559

CAA (2005a) *G-INFO dataset*, Safety Regulation Group, Aircraft Registration, Civil Aviation Authority, London, September 2005.

CAA (2005b) *UK Registered Aircraft as of 1st January Each Year*, Civil Aviation Authority, London, downloaded (26th April 2006) at www.caa.co.uk/default.aspx?categoryid=56&pagetype=90&pageid=107.

CAA (2005c) *Summary of Aircraft Registered 1975-1984*, Civil Aviation Authority, Safety Regulation Group, Aircraft Registration, London, September 2005.

CAA (2005d) *CAAhrs160905.xls, Dataset pro*vided to Lober, T., Civil Aviation Authority, Safety Regulation Group, Aircraft Registration, London, September 2005.

CAA (2006a) *Minutes of the Third Meeting of the Strategic Review of General Aviation*, held 13 December 2005, downloaded (12th February, 2006) at www.caa.co.uk/docs/589/GASR13Dec05meetinGAgreedminutes.pdf

CAA (2006b) *Valid Licences 1994 - 2000*, Civil Aviation Authority, London, downloaded (26th April 2006) at www.caa.co.uk/docs/175/srg_fcl_Summary_of_ValidLicences2000.PDFCivil

CAA (2006c) *Definitions of the term 'Aerodrome'*, Civil Aviation Authority, London, downloaded (26th April 2006) at www.caa.co.uk/default.aspx?categoryid=375&pagetype=90&pageid=1365

CAA (2006d) *Strategic Review of General Aviation*, downloaded (8th July) at www.caa.co.uk/default.aspx?catid=1&pagetype=90&pageid=5270

Calgary (2004) *The economic impact assessment of the Springbank Airport: 2004*, downloaded (26th April 2006) at www.calGAryairport.com

Cameron, K. S. (1986) *Effectiveness as Paradox: Consensus and Conflict in Conceptions of Organizational Effectiveness*, Management Science, Vol. 32, No. 5, 539-553, May.

Cameron (2006) *What will it cost?*, Cameron Balloons, downloaded (11th January 2006) at Cameronballons.co.uk/knowledge_sponsorship_whatwillitcost.htm

Chadwick, G. (1978) *A Systems View of Planning: Towards a Theory of the Urban and Regional Planning Process*, 2nd Ed., Pergamon Press, Oxford.

Claydon, J. (1996) *Negotiations in planning*, in Implementing Town Planning, ed. Greed, C., Longman, Harlow.

CLG (2005) *Planning Policy Statement 1: Delivering Sustainable Development*, Communities and Local Government, downloaded (5th January, 2007) at www.communities.gov.uk/index.asp?id=1143805

CLG (2007a) *Strong and Prosperous Communities – the Local Government White Paper*, Communities and Local Government, downloaded (5th September 2007) at www.communities.gov.uk/index.asp?id=1503999

CLG (2007a) *Moving towards the Planning White Paper*, Communities and Local Government, downloaded (5th May 2007) at www.comunities.gov.uk/index.asp?id=1505876

Conklindd (2006) *Aviation Information*, Conklin & de Decker, 2006, downloaded (13th January 2006) at www.conklindd.com

Connolly, T., Conlon, E.J., Deutsch, S.J. (1980) *Organizational Effectiveness: A Multiple-Constituency Approach*, Academy of Management Review, Vol. 5, No. 2, 211-217.

Coppick, J. T., Duffield, B. S. (1975) *Recreation in the Countryside*, 1975. Macmillan

CPRE (2004) *Countryside campaigners' verdict as the Government's planning bill becomes law*, Campaign for the Protection of Rural England Press Release, 14th May, downloaded (7th February 2005) at www.cpre.org.uk/news-releases/news-rel-2004/28-04.htm

Cuff, E.C., Sharrock, W.W., Francis, D.W. (2000) *Perspectives in Sociology*, 4th edition, Routledge, London.

Cullingworth, J. B. (1997) *British Land-use Planning: A Failure to Cope with Change?*, Urban Studies, Vol. 34, Nos. 5-6, 945-960.

Cullingworth, J., Nadin, V. (1994) *Town and Country Planning in Britain*, 11th Edition. Routledge, London.

Cullingworth, J., Nadin, V. (2006) *Town and Country Planning in Britain*, 14th Edition. Routledge, Oxon.

Davidoff, P., Reiner, T. A. (1973) *A Choice Theory of Planning*, A Reader in Planning Theory, Ed. Faludi, A., Permagon Press, Oxford.

DCLG (2006) *The Local Government White Paper: Strong and Prosperous Communities*, Department for Communities and Local Government, October, downloaded (20th September, 2007) at www.communities.gov.uk/documents/localgovernment/pdf/152456

De Vaus, D. (2004) *Surveys in Social Research*, Fifth Edition, Routledge, London.

Dearlove, J., Saunders, P. (2000) *Introduction to British Politics*, 3rd Ed., Polity Press, Cambridge.

DFT (2005) *The Future of Air Transport*, Department for Transport, downloaded (17th March 2005) at ww.dft.gov.uk/stellent/groups/dft_aviation/documents/sectionhomepage/dft_aviation_page.hcsp

DTLR (2001) *Planning: Delivering a Fundamental Change - green paper on planning*, Department for Transport, Local Government and the Regions, London SW1E 5DU, also downloaded (14th April 2006) at www.odpm.gov.uk/index.asp?id=1143141.

Edina (2003) *Boundary datasets of the United Kingdom*, downloaded (1st May, 2003) at http://edina.ac.uk/ukborders/

EIU (2006) *Gross Domestic Product*, Economist Intelligence Unit dataservices, downloaded (20th December) at http://secure.alacra.com/cgi-bin/alacraswitchISAPI.dll?sk=guest17&app=eiusite&msg=ExecContent&topic=Help&page=gdp#outputmeasureofgdp

FAA (2006) *Aircraft Registration & Certification*, Federal Aviation Administration, USA, downloaded (25th April 2006) at www.faa.gov/aircraft/

Fairlie, S. (1996) *Low Impact Development*, John Carpenter Publishing, Oxford.

Faludi, A. (1986) *Critical Rationalism and Planning Methodology*, Pion Limited, London.

Flyer (2005b) *Training School Survey*, Flyer Magazine, Seager Publishing, Bath, April 2005

Flyer (2006) *Come join the guerrillas!*, editorial, Seager Publishing, Bath, May 2006.

France, A. (2006) *Jet A1 Fuel Price*, European, Middle East & African Aviation Fuel Price Survey price, downloaded (13th January 2006) at http://www.tmdg.co.uk/misc/fuel.php

Frey, H.W. (2000) *Not green belts but green wedges: the precarious relationship between city and country*, Urban Design International, 5, pp. 13-25, Stockton Press.

Friedmann, J. (2004) *Strategic Spatial Planning and the Longer Range*, with an introduction by Healey, P. and comments by Albrechts, L. et al, Planning Theory & Practice, Vol. 5, No. 1, 49-67, Mar. '04.

GAAC (2002a) *What is General Aviation?*, downloaded (12th March 2002) at www.gaac.co.uk

Gallent, N., Baker, M., Wong, C. (1998) *Securing Housing Choice: New Opportunities for the UK Planning System*, Housing Studies, Vol. 13, No. 3, 425-438, 1998.

Gallent, N., Carmona, M. (2004) *Planning for Housing: Unravelling the Frictions in Local Practice*, Planning, Practice & Research, Vol. 19, No. 2, pp. 123-146, May.

Gallent, N., Howe, J. (1998) *Planning for Aviation and Diversification on Small Rural Airfields in England and Wales*, Regional Studies, Vol. 32(4).

Gallent, N., Howe, J. and Bell, P. (1999) *Alternative Land Uses on Small Rural Airfields*, Final Report, ESRC, Swindon.

Gallent, N., Howe, J. and Bell, P. (2001) *Re-Use of Small Airfields: a Planning Perspective*, Progress in Planning, May 2001, Vol. 55(4). Pergamon

Garside, P. (2000) *Regional Government in the United Kingdom: Democratic Representation or Economic Success?*, Governance, Institutional Change and Regional Development, Ed. Danson, M., Halkier, H., Cameron, G., Ashgate, Aldershot.

Gilg, A. W. (1999) *Perspectives on British Rural Planning Policy 1994-97*, Aldershot.

Gilg. A.W. (2005) *Planning in Britain: Understanding and Evaluating the Post-war System*, Sage, London

Guardian, The (2005) *Kyoto Protocol comes into force*, Wednesday February 16th.

Guardian, The (2007a) *Climate change bill is revolutionary, says Blair*, Tuesday, 13th March.

Guardian, The (2007b) *Kelly move to cut planning red tape angers greens*, Tues. 22nd May.

Greenberg, J., Baron, R.A. (1997) *Behaviour in Organizations*, Prentice Hall, New Jersey.

Gregory, R., McDaniels, T., Fields, D. (2001) *Decision Aiding, Not Dispute Resolution: Creating Insights through Structured Environmental Decisions*, Journal of Policy Analysis and Management, Vol. 20, No. 3, 415-432, Wiley & Sons.

Hall, P. (2002) *Urban and Regional Planning: Fourth Edition*, Routledge, London.

Hansard (2001) *General Aviation*, House of Lords, 27 Feb. 2001.

Haralombos, M., Holborn, M. (2004) *Sociology: Themes and perspectives*, HarperCollins, London.

Harnett, I. R. (2005b) *Trends in UK General Aviation and their implications for the SRG Review*, email submission to the CAA, copy email to Lober, T., 29th August 2005.

Hart, D.A., McCann, P. (2000) *The Continuing Growth of London Stansted Airport: Regional Economic Impacts and Potential*, Regional Studies, Vol. 34.9, pp. 875-893, Carfax

Harvey, N., (2006) *Charter Rates*, Email to T. Lober from Neil Harvey, Hunt and Palmer, dated 16th September 2005.

Haughton, G., Counsell, D. (2004) *Regions, Spatial Strategies and Sustainable Development*, Routledge, London.

Healey, P. (1998) *Collaborative planning in a stakeholder society*, Town Planning Review, 69,1, 1-21.

Healey, P. (2003) *Collaborative planning in Perspective*, Planning Theory Vol. 2(2).

Healey, P. (2004) *The Treatment of Space and Place in the New Strategic Spatial Planning in Europe*, The International Journal of Urban and Regional Research, Vol. 28, 45-67.

Healey, P. (2006) *Territory, integration and spatial planning*, in Territory, Indentity and Spatial Planning; Spatial governance in a fragmented nation, Edited by Tewdwr-Jones, M. and Allmendinger, P., Routledge, Oxon. pp 64-80.

Healey, P., Khakee, A., Motte, A., Needham, B. (1997) *Making Strategic Spatial Plans*, Innovation in Europe, Chapter 16, UCL Press Limited, London.

Hoggart, K. (2005) *The city's hinterland: dynamism and divergence in Europe's peri-urban territories*, Aldershot: Ashgate

Holvad, T., Preston, J. (2005) *Road Transport Investment Projects and Additional Economic Benefits*, Presented at the 45th Congress of the European Regional Science Association, downloaded (23rd July 2006) at www.feweb.vu.nl/ersa2005/final_papers/522.pdf

Hughes, C. (2005) *Compton Abbas Case Notes*, 3rd November, Unpublished document reflecting case study visit as agreed with interviewee, Clive Hughes, Aerodrome owner.

IAU (2005) *Brundtland Definition: Sustainable Development*, International Association of Universities, downloaded (26th April, 2005) at www.unesco.org/iau/sd/sd_definitions.html

ICAO (1998) *Human Factors in the Investigation of Accidents and Incidents*, ICAO, Digest No.4.

ICAO (2005) *International Civil Aviation Organization, terms used*, downloaded (19th March 2005) at www.icaodata.com/Terms.aspx

Innes, M. (2003) *Investigating the Investigators – Studying Detective Work,* Researching Social Life, Ed. Gilbert, N., Second Edition, Sage

Johnson T. (2001) *Trends in Aviation*, seminar, Aviation Environment Federation (AEF) London, EC4V 3DT, downloaded (10th March 2001) at www.aef.org.uk

Kingdom, J. (2000) *Government and Politics in Britain: An Introduction*, 2nd Ed., Polity Press, Cambridge.

Kember, P. (2001) *The future of UK Aerodromes*, GAAC Seminar, London, May 2001.

King, B. (2002) *Compilation of UK Airfields no longer in use*, downloaded (26th April 2006) at www.rochesterairport.flyer.co.uk/closed.htm

Kunzmann, K. R. (2001) *State Planning: A German Success Story?*, International Planning Studies, Vol.6, No.2, 153-166, 2001.

Lober, T. (2002) *GASAR Exploratory Study: An Investigation of Private Pilot Behaviours & Attitudes at Cloudbase, Redhill Aerodrome*, GAAC internal paper, February.

Lober, T. (2004a) *The National Pilot Survey*, GAAC internal paper, September.

Lober, T. (2004b) *Aerodrome Categorisation using Secondary Aerodrome Data*, GAAC internal paper, September.

Lober, T. (2004c) *Local Authority Survey (England)* GAAC internal paper, November.

Lober, T. (2004d) *Aerodrome Operators' Survey*, GAAC internal paper, December.

Lober, T. (2005a) *Manufacturers and Traders Survey*, GAAC internal paper, August.

Lober, T. (2005b) *An analysis of CAA data regarding the number of GA aircraft and hours flown for the years 1984-2001*, GAAC internal paper, December.

Lober, T. (2006a) *An estimate of the number of GA movements in the UK*, GAAC internal paper, February.

Lober, T. (2006b) *An estimate of the current capital value of the UK's GA fleet*, GAAC internal paper, February.

Lober, T. (2006c) *An estimate of the annual direct socioeconomic contribution of GA to the UK economy*, GAAC internal paper, February.

Lober, T., Gallent, N. (2005a) *Planning's Failures from a General Aviation Perspective*, Planning Research Conference, Manchester University, April 2005.

Lober, T., Gallent, N. (2005b) *Spatial Planning and Britain's General Aviation Industry*, AESOP Conference, Vienna, July.

Lock, D. (2002) *Reality Check Required*, Town and Country Planning Journal. Vol. 71(2) February 2002.

Lockyears (2004) *Farm 'Strips' and Private Airfields Flight Guide*, Editors B. & J. M. Lockyear, 4th Ed., Stockport, Cheshire.

Lowry, I. S. (1964) *A Model of Metropolis*, UCL Press

Martineau (2004) *The Planning & Compulsory Purchase Act 2004*, Property Bulletin, Martineau Johnson, downloaded (7th February 2005) at www.martineau-johnson.co.uk/publication_event/updates/Planning%20&%20Compulsory%20Purchase%20Act%20Flyer%20May%202004.pdf

Maxwell, J. (2006) *Barton Control Tower, now a listed building*, Friday 24th February, UKGA, downloaded (18th May 2006) at ukGA.com/aerodrome/content.cfm?aerodromeId=1300&contentId=6292

May, T. (2001) *Social Research - Issues, methods and process*, Third Edition, Open University Press, Buckinghamshire.

Maynard-Moody, S., McClintock, C. (1987) *Weeding an Old Garden: toward a New Understanding of Organizational Goals*, Administration & Society, 125-142, May.

Miller, D., Patassini, D. (2005) *Beyond Benefit Cost Analysis: Accounting for Non-Market Values in Planning Evaluation*, Ashgate Publishing, Aldershot.

Mitchell, J. C (1983) *Case and situation analysis*, Sociological Review, Vol. 31, pp187-211.

Mintzberg, H. (1994) *The Rise and Fall of Strategic Planning*, Prentice Hall, New York.

Morphet, J. (2006) *Global localism: interpreting and implementing new localism in the UK*, inTerritory, Indentity and Spatial Planning; Spatial governance in a fragmented nation, Edited by Tewdwr-Jones, M. and Allmendinger, P., Routledge, Oxon. pp 305-19.

Multimap (2006) *Aerial views of South Cambridgeshire*, downloaded at Multimap.com

Musgrave, J., Anniss, M. (1996) *Behavioural Dynamics*, The Free Press, London.

National Statistics (2006) *UK Input-Output Analyses*, downloaded (26th April 2006) at www.statistics.gov.uk/downloads/theme_economy/Input_Output_Analyses_2005_edition.pdf

Nicholls, D. (2005) *Consultation on the Application of UK Regulatory Requirements to Foreign Registered Aircraft Based Permanently in the UK*, Annex A, Department for Transport, 1st August 2005, downloaded (1st December 2005) at www.dft.gov.uk/stellent/groups/dft_aviation/documents/pdf/dft_aviation_pdf_039541.pdf

Nolan, Lord (1997) *Review of Standards of Conduct in Executive NDPBs, NHS Trusts and Local Public Spending Bodies,* Committee on Standards in Public Life, Fourth Report, downloaded (8th June, 2003) at http://www.archive.official-documents.co.uk/document/caboff/nolan4/execsumm.htm

Nugent, K. (2005) *Barton Aerodrome Case Notes*, 28th June, Unpublished document reflecting case study visit and agreed with interviewee, Kay Nugent - General Manager and Peter Smith - Chairman of Lancashire Aero Club.

ODPM (2002) *Planning; Delivering a fundamental change*, Office of the Deputy Prime Minister, downloaded (26th April 2005) at www.odpm.gov.uk/index.asp?id=1143142

ODPM (2006a) *Planning Policy Statements (PPS)* Office of the Deputy Prime Minister, downloaded (14th April 2006) at http://www.odpm.gov.uk/index.asp?id=1143803

ODPM (2006b) *Planning Policy Guidance Notes (PPG)* Office of the Deputy Prime Minister, downloaded (14th April 2006) at www.odpm.gov.uk/index.asp?id=1143926

OEF (1999) *The Contribution of the Aviation Industry to the UK Economy*, Oxford Economic Forecasting, Oxford (note refers to full report - not summary report under same name).

ONS (2006) *Input-Output - United Kingdom National Accounts*, Office of National Statistics, downloaded (29th April 2006) at www.statistics.gov.uk/CCI/nugget.asp?ID=179

Owen, S. (1994) *Land Limits and sustainability: a conceptual framework and some dilemmas for the planning system*, Trans. Inst. Br. Geogr. NS 19 439-456.

Partidario, M. R. (2005) *The Contribution of Strategic Impact Assessment to Planning Evaluation*, in Beyond Benefit Cost Analysis: Accounting for Non-Market Values in Planning Evaluation, Eds. Miller, D., Patassini, D., Ashgate Publishing, Aldershot.

Pearce, B. (2005) *The Use and Abuse of Indicators for Evaluating Land Use and Environmental Planning – Experience from the UK*, in Beyond Benefit Cost Analysis: Accounting for Non-Market Values in Planning Evaluation, Eds. Miller, D., Patassini, D., Ashgate Publishing, Aldershot.

Pennington, M. (2000) *Planning and the Political Market*, The Athlone Press, London

Politics UK (2005) *Immigration Detention Centres*, Friday 11th Nov., downloaded (18th July 2006) at www.politics.co.uk/issuebrief/domestic-policy/immigration/immigration-detention-centres/immigration-detention-centres-$366686.htm

Pooleys (2004) *Pooleys Flight Guide*, Editors Pooley R. & Patel R., Pooleys Flight Equipment Ltd., Elstree, Herts.

Pugh, D.S., Phillips, E.M. (2005) *How to Get a Phd: A Handbook for Students and Their Supervisors*, 4th ed., Open University Press, Maidenhead.

Rae A. (2001) *The Policy and Consultation Process*, seminar, Aviation Environment Federation (AEF) London, EC4V 3DT, downloaded (10th March 2001) at www.aef.org.uk

Raco, M. (2006) *Building new subjectivities: devolution, regional identities and the re-scaling of politics*, in Territory, Indentity and Spatial Planning; Spatial governance in a fragmented nation, Edited by Tewdwr-Jones, M. and Allmendinger, P., Routledge, Oxon. pp 320-34.

Reporter (2005) *SCRAMM Victory*, Saffron Walden Reporter, 10th February.

Ritzer, G., Goodman, D.J. (2004) *Sociological Theory*, 6th Ed., McGraw-Hill, London.

Roberts, M. (1974) *An Introduction to Town Planning Techniques*, 1974, Huchinson.

Sager, T. (2001) *Positive theory of planning; the social choice approach*, Environment and Planning A, 33, 629-647

Salford (2003) *Revised Deposit Draft Replacement Plan*, Unitary Development Plan, City of Salford, November 2003.

Sloman, J. (2003) *Essentials of Economics*, 3rd Ed., Financial Times, Prentice Hall, London.

Stake, R.E. (1995) *The Art of Case Study Research*, Sage, London.

Stanlake, G. F. (1989) *Introductory Economics*, Longman, London.

TheHangar (2006) *AVGAS Fuel price*, downloaded (13th January 2006) from www.thehangar.co.uk/fuel/fuel.shtml

Thomas, K. (1997) *Development Control: Principles and Practice*, London, UCL Press.

Thomas, K., Roberts, P. (2000) *Metropolitan strategic planning in England*, Town Planning Review, 71

Tomkins, J., Topham, N., Twomey J., Ward, R. (1998) *Noise versus Access: the Impact of an Airport in an Urban Property Market*, Urban Studies, Vol. 35, No. 2, pp. 243-258. Carfax.

Tewdwr-Jones, M., Bishop, K., Wilkinson, D. (2000) *'Euroscepticism', Political Agendas and Spatial Planning: British National and Regional Planning Policy in Uncertain Times*, European Planning Studies, Vol. 8, No. 5, Taylor and Francis.

Thornley, A. (1993) *Urban planning under Thatcherism: the Challenge of the Market*, 2nd Ed. Routledge, London.

Turnbull, R. (1988) *The Role of Environmental Impact Assessment in the Planning Process*, Eds. Clark, M., Herington, J., Mansell Publishing, London.

Tribe, J. (1995) *The Economics of Leisure and Tourism, Environments, Markets and Impacts*, Butterworth-Heinemann, London.

TSO (2005) *CAP 393 Air navigation: the order and the regulations*, 3rd ed., consolidated October 2005, The Stationery Office, London. also downloaded (15th April 2006) at www.caa.co.uk/application.aspx?categoryid=33&pagetype=65&applicationid=11&mode=detail&id=226

UN (2005) *Agenda 21: Rio Earth Summit*, downloaded (April 26th) at www.un.org/esa/sustdev/documents/agenda21/english/agenda21chapter1.htm

UNEP (2006) *Climate Change: Kyoto*, United Nations Environmental Programme downloaded (10th March) at http://climatechange.unep.net/

Van Driesche, J., Lane, M. (2002) *Conservation through Conversation: Collaborative Planning for Reuse Of a Former Military Property*, Planning Theory & Practice, Vol. 3, No. 2, 2002.

Veal, A. J., (1971) *A Strategy for the Provision of Recreation Facilities. Experiments in Recreation Research.* Edited by Burton, T.L., George Allan & Unwin.

Vigar, G., Healey, P. (1999) *Territorial Integration and 'Plan-led' Planning*, Planning Practice & Research, Vol. 14, No. 2, pp. 153-169, Taylor and Francis.

Vigar, G., Healey, P., Hull, A., Davoudi, S. (2000) *Planning, Governance and Spatial Strategy in Britain: An Institutional Analysis*, Planning, Environment, Cities series, Macmillan Distribution, Hampshire.

Watson, V. (2003) *Conflicting Rationalities: Implications for Planning Theory and Ethics*, Planning Theory & Practice, Vol. 4, No. 4, pp. 395-407, December, Routledge.

Whitelegg, J. (2003) *The Economics of Aviation: a North West England perspective, Report for the CPRE North West Regional Group*, downloaded (29th April 2006) at www.cpre.org.uk/resources/pub/pdfs/transport/air-transport/economics-of-aviation.pdf

Williams, A., Dobson, P., Walters, M. (1996) *Changing Culture: New Organisational Approaches*, Cromwell Press, London.

Womersley, B. (2005) (editor) *Civil Aircraft and Glider Registers of United Kingdom & Ireland*, Air-Britain (Historians) Limited, Kent, 2005.

Wong, C. (1998) *Old wine in a New Bottle?*, Planning Methods and Techniques in the 1990's, Planning Practice & Research, Vol. 13, No.3, pp.221-236, 1998

Wong, C. (2002) *Is there a need for a fully integrated Spatial Planning framework for the UK?*, Planning Theory & Practice, Vol. 3 No. 3 277-300, 2002.

Woodside, J. (2002) *A Catalogue of UK Airfields*, downloaded (14th March 2002) at www.homepages.mcb.net/bones/06airfields/UK/uk.htm

WSDOT (2006) *Economic Impacts of Washington Airports*, Washington State Department of Transport, downloaded (29th April 2006) at http://www.wsdot.wa.gov/Aviation/EconImpacts/Default.htm

Yiftachel, O., Huxley, M. (2000) *Debating Dominance and Relevance: Notes on the 'Communicative Turn' in Planning Theory*, International Journal of Urban and Regional Research, Volume 24.4, December 2000.

Yin, R.K. (2003) *Case Study Research - Design and Methods*, Third Edition, Sage, London.

APPENDIX A: Aerodrome categorisation (additional information)

This appendix contains additional information about the categorisation of flying sites as described in the main thesis. Section (1) provides a descriptive account of each of the six categories and Section (2) contains the pictorial results from the cluster analysis executed by SPSS.

Section (1): Descriptive account of aerodrome categories

CATEGORY "A"		
BIRMINGHAM	EXETER	MANSTON (Kent International)
BLACKPOOL	FARNBOROUGH	NEWCASTLE
BOURNEMOUTH (Hum)	HUMBERSIDE	NORWICH
BRISTOL	LEEDS BRADFORD	SOUTHAMPTON
BRISTOL FILTON	LIVERPOOL JOHN LENNON	SOUTHEND
CAMBRIDGE	LONDON LUTON	TEESSIDE
COVENTRY	LONDON CITY	
EAST MIDLANDS	MANCHESTER	

There are twenty two aerodromes within this category representing a group that are best described as *Regional Airports*. As such they are included in both Pooleys and AFE flight guides but not Lockyears. Most are located in the urban fringe where they provide the higher population areas with access to Commercial, Business and other General Aviation aircraft. Multimap aerial photographs suggested the average site in this group typically has at least twelve large aircraft and between ten and twenty five light aircraft parked in the open. Flight guides indicate that 40% have formal Helicopter landing pads. All the sites are shown on general purpose OS maps and all have hard runways and taxiways plus large terminal buildings and hangers. Slightly less than half have more than one runway direction and only Blackpool and Cambridge cover three directions. Cambridge is the only site with a mix of grass and hard runways. All have runway lengths in excess of 1800 metres that have either partial or full lighting. These airports are characterized by full navigational aids, including ILS and without exception have full air traffic control facilities. Most are open all hours with only a quarter operating restricted times. All have maintenance and fuel facilities and all apart from Farnborough have either restaurant or café facilities. All have full customs facilities apart from Farnborough and Bristol Filton. Flight schools are common in this group with the average site having between two and four identified companies offering training. All charge landing fees and are run by companies as against clubs or individuals. Unsurprisingly there was little evidence of specialisation with no glider or microlight activity and yet at some sites certain types of aircraft are specially excluded. Only Newcastle and Teeside are not CAA licensed aerodromes. On average between 40 and 80% of movements are reported to be GA related although Birmingham and Manchester have less than 5% and Luton has less than 20% GA movements.

CATEGORY "B"		
BIGGIN HILL	GLOUCESTERSHIRE (Staverton)	STAPLEFORD
BLACKBUSHE	KEMBLE	THRUXTON
CRANFIELD	MANCHESTER BARTON	WHITE WALTHAM
DENHAM	OXFORD	WOLVERHAMPTON (Halfpenny Green)
ELSTREE	REDHILL	WYCOMBE AIR PARK (BOOKER)
FAIROAKS	SHOREHAM	

Category B contains seventeen aerodromes that may be described as *Major GA Airports*. Like Category A, aerodromes in this category are also included in both Pooleys and AFE flight guides but not Lockyears and are likely to be on the urban fringe. However they do not provide facilities for Commercial Air Transport and but concentrate heavily on Business and other General Aviation aircraft. With two thirds of sites possessing Helicopter landing pads this category appears particularly focussed on business needs. At least twenty five light aircraft are likely to be parked in the open at any one time and some sites have more than one hundred. All the sites are shown on general purpose OS maps. Most have either hard or mixed hard & grass runways although Manchester Barton, Redhill and White Waltham are purely grass. Generally runways lay in two or three directions apart from Blackbush, Elstree and Fairoaks that have only one runway. All runway lengths are in excess of 900 metres apart from Manchester Barton which has a maximum TORA length of 621 metres. Indeed Barton is generally an exception with regard to infrastructure (buildings, taxiway and lighting development) but it appears to have a high level of resident light aircraft that qualifies it for this category. Apart from Barton all the sites have partial runway lighting and the majority has both basic navigational aids and formal air traffic control. They operate extended hours, have maintenance and fuel facilities and apart from Stapleford have either restaurant or café facilities. Only Biggin and Shoreham have full customs facilities, most operate on a 'by arrangement' basis, except from Kemble and Wolverhampton. Category "B" has the highest number of flight training schools with three to six schools at the average site. All charge landing fees and are generally run by companies except for Barton, Stapleford and White Waltham that are club based. Some sites support microlights and gliders but generally this category was more to exclude certain aircraft types. All are CAA licensed aerodromes and on average they report high levels (in excess of 95%) for General Aviation movements.

CATEGORY "C"

ANDREWSFIELD	HUDDERSFIELD (Crossland Moor)	PLYMOUTH
BECCLES	ISLE OF WIGHT (Sandown)	POPHAM
BEMBRIDGE	LANDS END (St Just)	RETFORD (Gamston)
BEVERLEY (Linley Hill)	LASHAM	ROCHESTER
BODMIN	LASHENDEN (Headcorn)	SANDTOFT
BOURN	LEICESTER	SCILLY ISLES (St Mary's)
CHICHESTER (Goodwood)	LITTLE GRANSDEN	SEETHING
CLACTON	LYDD	SHEFFIELD CITY
COMPTON ABBAS	NETHERTHORPE	SHERBURN IN ELMET
DERBY	NORTHAMPTON (Sywell)	SHOBDON
DUNKESWELL	NOTTINGHAM	SLEAP
EAGLESCOTT	OLD BUCKENHAM	TATENHILL
EARLS COLNE	OLD SARUM	TRURO
ELMSETT	PANSHANGER	TURWESTON
FENLAND	PERRANPORTH	WELLESBOURNE MOUNTFORD
FULL SUTTON	PETERBOROUGH CONINGTON	WICKENBY
HUCKNALL	PETERBOROUGH SIBSON	YEOVIL (Westland)

There are fifty-one aerodromes in this category, representing a group best described as *Developed GA Airfields*. Like Categories A & B, aerodromes in this category are also included in both Pooleys and AFE flight guides but nearly a half are also included in Lockyears. All are located in rural areas. Generally this category is similar to B but with less infrastructure and therefore less likely to be used by Business Aviation. The average site will have between ten to twenty five light aircraft parked in the open. In several sites these aircraft are likely to be Gliders and associated with large numbers of trailers rather than hangars. Only 15% of aerodromes in this category have formal Helicopter pads. Most but not all are shown on general purpose OS maps. The majority have at least two runway directions but 40% are unidirectional. Half have purely grass runways and nearly 40% hard runways, the balance being a mixture. Runway lengths encompass the complete spectrum but the average TORA length is 600 – 900 metres. A fifth have full runway lighting and a third partially lighting, leaving under a half with not night time capability. 40% have basic navigational aids and all have basic ground to air communication although 7% only operate this occasionally. A similar percentage only operates weekends or weekdays, with the majority being open all week between sunrise and sunset. Equally 7% provide no fuel on site and 30% do not offer any maintenance facility. 90% however can provide beverages to the pilots and two thirds have either restaurant or café facilities. Nearly 8% have full customs facilities, for example Lydd and Plymouth, whilst for many sites customs can be arranged. However, nearly 30% are not recognised customs entry points. A third of sites have no training school, a third have one and the rest have two or three. Most charge landing fees and only three suggest a donation or do not charge with fuel. Unlike Category B, 44% are operated by clubs and the rest by companies. However, nearly all are CAA licensed aerodromes, the exceptions being Popham, Lasham and Huddersfield. All are highly dependent upon General Aviation movements. A third of sites specifically mention gliding and microlight activity.

CATEGORY "D"

BAGBY (Thirsk)	DUXFORD	POCKLINGTON
BIDFORD	ENSTONE	SALTBY
BREIGHTON	ESHOTT	SHENNINGTON (Edgehill)
BRIMPTON	FOWLMERE	SILVERSTONE
BROOKLANDS	HENSTRIDGE	SPANHOE
BRUNTINGTHORPE	HINTON IN THE HEDGES	STOKE
BURN (SELBY)	HUSBANDS BOSWORTH (Rugby)	STURGATE
CAMPHILL	INCE	SUTTON BANK (Thirsk)
CARLISLE	LANGAR	TARN FARM
CASTLE BYTHAM	LONG MARSTON	TIBENHAM
CHATTERIS	MAYPOLE	WESTON ON THE GREEN
CHILBOLTON	MILFIELD	WOODLANDS (Roche)
CLUTTON HILL FARM	NAYLAND	YORK (Elvington)
DAVIDSTOW MOOR	NORTH WEALD	YORK (Rufforth)
DEANLAND (Lewes)	NYMPSFIELD (Stroud)	
DUNSTABLE DOWNS	OTHERTON	

With forty-six flying sites in this category, it may be described as the *Basic GA Airfields* group. All aerodromes in this category are included in either Pooleys or AFE flight guides (but not necessarily both) and two thirds are also included in Lockyears. Almost all are located in rural areas, apart from Brooklands. Although all factors considered Brooklands is best assigned to this group, as a low movement museum site (unlike Duxford) it is an obvious exception, and will not be further highlighted in the following. Generally this category is similar to C but with even less infrastructure and less evidence of usage. The typical site will have between three to ten aircraft parked in the open, although a quarter may have up to twenty five aircraft visible. 80% of aerodromes in this category do not have formal Helicopter pads. A fifth of sites are not shown on general purpose OS maps. Again important gliding sites are included. Compared to Category C, runways are more likely to be in one direction only and be shorter, and less likely to be hard as a half have only one runway direction, 20% have a TORA less than 450 metres and less than 30% have hard runways. Equally runway lighting and navigational aids are unusual. A quarter do not provide basic ground to air radio communication, even occasionally. A third cannot provide fuel and nearly a half do not offer maintenance facilities. Other facilities are also limited. A third do not provide on-site beverages and 93% are not listed for customs clearance. One fifth can provide training but as this is usually by only one school and it is likely to be limited to one type of flying. Conversely nearly a half either charge no landing fee or waive it if fuel is purchased. On complete contrast to Category C, licensed aerodromes are the exception as only Silverstone and Duxford are licensed in this group. Whilst the majority, over a half, are operated by clubs and more than a third by companies, this groups also contains a few sites operated by individuals. This group was also distinguished as 70% of sites specifically mention microlight and/or gliding activity.

CATEGORY "E"

ABBOTS BROMLEY (Yeatsall Farm)
ASHCROFT
AUDLEY END
AYLESBURY (Thame)
BADMINTON
BAKERSFIELD
BATTLEFLAT FARM
BAXTERLEY
BELLE VUE
BOONES FARM
BOSTON
BOUGHTON (North)
BOURNE PARK
BROOK FARM (Garstang)
BUCKNALL
CARK
CHILTERN PARK
CLENCH COMMON
COAL ASTON
COTTERED (Buntingford)
CRAYSMARSH FARM
CROFT FARM (Defford)
CROMER (Northrepps)
CROWFIELD
CROWLAND (Spalding)
CUCKOO TYE FARM
CURROCK HILL
DEENETHORPE
DITTON PRIORS (Bridgenorth)
DRAYCOTT FARM (Swindon)
DRAYTON ST LEONARD
EASTBACH (Spence)
EASTON MAUDIT
EDDISFIELD
EGGESFORD
FADMOOR (Moors National Park)
FARTHING CORNER (Stoneacre Fm)
FARWAY COMMON
FELIXKIRK
FELTHORPE
FINMERE
FINNINGLEY VILLAGE
FISHBURN
FRAMLINGHAM
GARFORTH
GARSTON FARM
GARTON FIELD
GERPINS FARM
GREAT MASSINGHAM
GREAT OAKLEY
HALWELL
HANLEY (Hanley William)
HARDWICK (Norwich)
HAXEY
HAYDOCK PARK (Newton-le-Willows)
HOLLYM (Home Farm)
HOME FARM
HOUGHAM
HULL (Mount Airey)
KIRKBRIDE
KIRKBYMOORSIDE
KNOCKIN (Oswestry)
LADDINGFORD
LAMBLEY (Jericho Farm)
LANGHAM
LARK ENGINE FARMHOUSE
LEDBURY (Velcourt)
LEE ON SOLENT
LITTLE SNORING
LITTLE STAUGHTON
LONG ACRES FARM (Sandy)
LONG STRATTON
LOUTH HALL FARM (North Reston)
LUDHAM
MARSHLAND
MELBOURNE (Melrose Farm)
MILSON (Cleobury Mortimer)
MITCHELLS FARM
MONEWDEN (Cherry Tree Farm)
NEW YORK
NEWBURY RACE COURSE
NEWMARKET HEATH
NEWNHAM (Baldock)
NEWTON PEVERIL
NORTH COATES
NORTH MOOR (Scunthorpe)
NUTHAMPSTEAD (Royston)
OAKSEY PARK
PEPLOW
PETERLEE
PLAISTOWS
POUND GREEN
RAYNE HALL FARM
REDLANDS (Swindon)
REDNAL
RODDIGE
ROSERROW
ROSSENDALE (Lumb)
ROTHWELL
ROUGHAM
RUSH GREEN (Hitchin)
SACKVILLE FARM (Riseley)
SALCOMBE
SANDHILL FARM
SEIGHFORD
SHEEPWASH
SHERLOWE
SHIPDHAM
SHOTTESWELL
SHUTTLEWORTH (Old Warden)
SITTLES FARM (Lichfield)
SKEGNESS (Water Leisure Park)
ST MICHAELS
STALBRIDGE
STOODLEIGH BARTON
STRETTON
STRUBY (Gliding & Old Heliport)
SUTTON MEADOWS
SWANTON MORLEY
SWINFORD
TEMPLE BREUER
THORNE
THURROCK
TIBENHAM (Priory Farm)
TILSTOCK
TOP FARM
TOWER FARM
TRULEIGH FARM
WAITS FARM
WALTON WOOD
WESTBURY SUB MENDIP
WESTON UNDERWOOD
WESTONZOYLAND
WEYBOURNE (Muckleburgh)
WHARF FARM
WOMBLETON (Pickering)
WOOBURN
WOONTON
WROUGHTON
YEARBY

Category E contains the largest number of flying sites. The 140 sites identified represent aerodromes that might be best described as *Developed Airstrips*. 5% of aerodromes in this category are not included in either Pooleys or AFE flight guides and 76% are to be found in Lockyears. Almost all are located in rural areas. Examination by aerial photography revealed it is rare to see more than one aircraft parked in the open and many sites show no evidence of aircraft parking. Hangers are not however unusual, with three quarters of sites having one or several buildings. Even so, three quarters are not identifiable on general purpose OS maps. 80% are grass only sites and two thirds have limited to one runway direction with only 5% having more than two directions. Compared to category D, runways are shorter as over 90% (verses 60%) are less than 900 metres. Only Fadmoor, Lee on Solent and Marshland have runway lighting and only Nuthampstead has any form of navigational aid.

60% do not operate a basic ground to air radio communication, even on occasions. 80% provide no maintenance and 60% cannot enable refueling. Two thirds do not cater for on-site beverages, only three sites could arrange for customs clearance and the existence of a known training school is limited to only four locations. In common with category D however over half either do not charge for landings or give free landings with fuel. Not surprisingly none of these aerodromes are CAA licensed. Nearly two thirds are operated by individuals, many as obvious farm strips, and the balance is shared equally between clubs and companies.

CATEGORY "F"

ALCESTER
ALLENSMORE
ASHLEYS FIELD
BEDFORD (Castle Mill)
BENINGTON STRIP
BERROW
BINSTEAD
BOUGHTON
BOWERSWAINE FARM
BOWLDOWN
BROMSGROVE (Stoney Lane)
BROOK FARM (Boylestone)
BROOKFIELD FARM
CALCOT PEAK
CAUNTON
CHALLOCK
CHILSFOLD FARM
CLAYBROOKE FARM
CLIFFE
CLIPGATE
COLEMAN GREEN
CROFT
DOWLAND
EAST WINCH
ETTINGTON
EXNING
FANNERS FARM
FOLKESTONE (Lyminge)
FOREST FARM
FOUR LANES
GORRELFARM
GRANGEWOOD
GRASSTHORPE GRANGE
GRAVELEY
GREEN FARM
GROVE FARM
GUNTON PARK (Hanworth)
HAYWOOD (Broadmeadow Farm)
HENSCOTT FARM
HERMITAGE
HOLLY MEADOW FARM
HOOK
JACKRELLS FARM
JUBILEE FARM (Wisbech)
KEYSTON
KIMBOLTON (Stow Longa)
KINGFISHERS BRIDGE
KINGS LYNN (Tilney St Lawrence)
LAINDON
LITTLE CHASE FARM
LODGE ROAD AIRSTRIP
LOUTH STEWTON
LOW FARM
LOWER BOTREA
LUNDY ISLAND
LYDEWAY FIELD
LYMM DAM
MANOR FARM
MANOR FARM (Compton Chamberlayne)
MANOR FARM AIRFIELD
MANOR FARM PRIVATE STRIP
MANTON
MELBURY
MILDEN
MILTON
MOORLANDS (Hull)
NEWARK (Beeches Farm)
NEWNHAM GROUNDS
OAKLANDS
OLD HAY AIRFIELD
ORANGE GROVE - CHAVENAGE
OXENHOPE
PARK FARM (Eaton Bray)
PAYDEN STREET
PEAR TREE FARM (Chesire)
PEAR TREE FARM (Oxon)
PENT FARM
RAYDON WINGS
REDMOOR FARM
SHEPTON MALLET (Lower Withail Farm)
STONES FARM
STOW
SWANBOROUGH FARM
THORNBOROUGH GROUNDS
THORPE LE SOKEN
TRENDERWAY FARM
TRENHOLME FARM
TWYCROSS (Gopsall House Farm)
UPPER HARFORD
VALLANCE BY WAYS(Gatwick Museum)
WADSWICK STRIP
WALLIS INTERNATIONAL
WATCHFORD FARM
WELLCROSS FARM
WEST HORNDON
WHITBY (Egton)
WILLOW FARM
WING FARM (Warminster)

The final category contains ninety-eight flying sites that may be best described as *Basic Airstrips*. 95% of aerodromes in this category are listed in Lockyears and only a third are to be found in either Pooleys or AFE flight. Aerial photography rarely reveals any aircraft parked in the open and less than half show any sign of hangarage. All sites in this category are grass, 87% have only one direction and 97% have TORA lengths less than 900 metres. As might be expected 90% are consequently not identifiable on general purpose OS maps. None have runway lighting or navigational aids and only Caunton has occasional ground to air radio. Facilities are very limited. Only one offers maintenance, only four fuel and only three can provide a cup of coffee. Customs and training schools are non existent. These sites are 90% owned by individuals although eight are listed as run by companies and only one by a club. Since data for this category was mainly dependent upon Lockyears and Lockyears does not indicate landing fees the assumption is that most sites are either free or open to donations.

Section (2) : Cluster analysis – SPSS dendrogram.

The following depicts the output from SPSS, split into six flying site classes, starting with Category F (basic airstrips) and ending with Category A (regional airports).

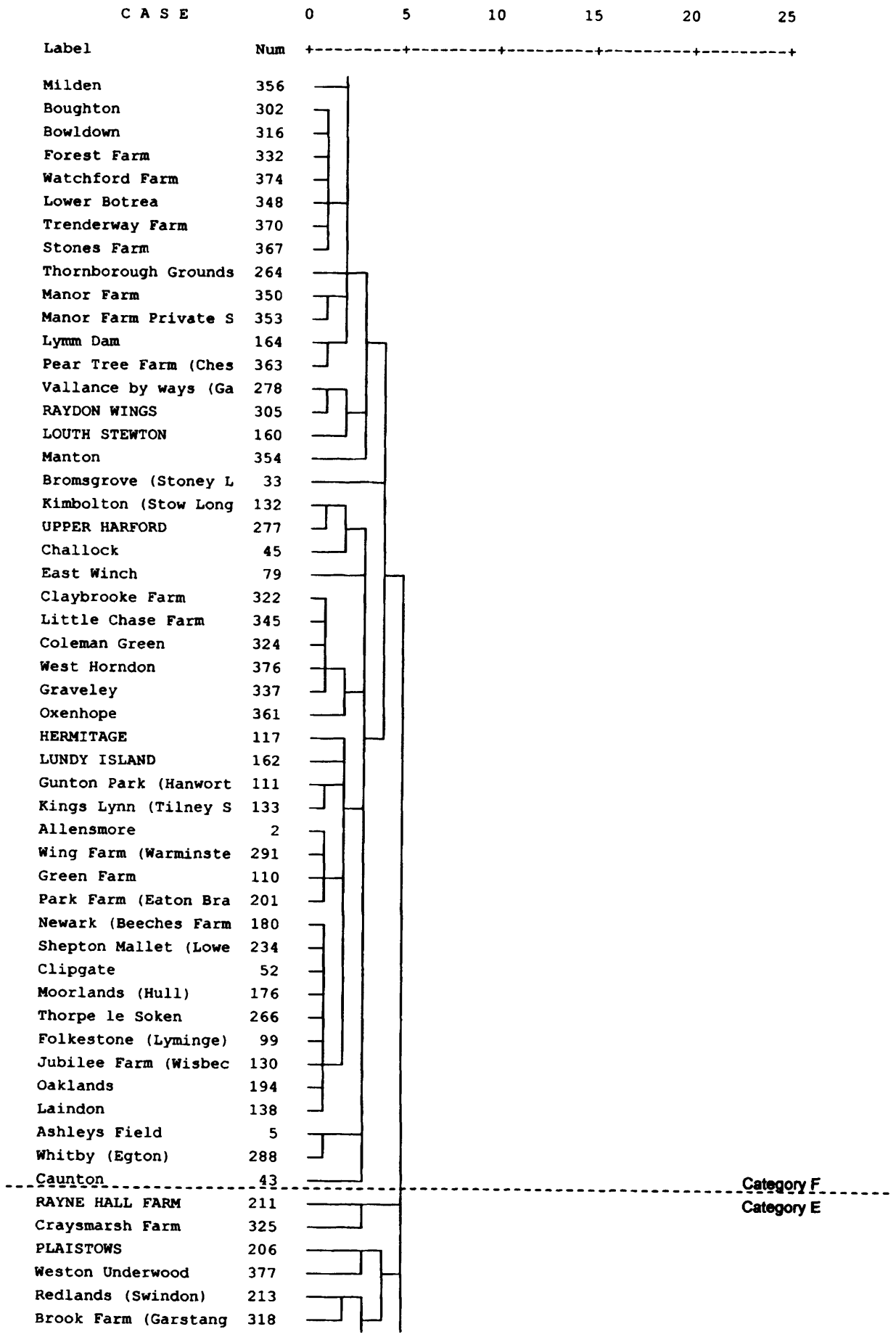
* * * * * * H I E R A R C H I C A L C L U S T E R A N A L Y S I S * * * * * *

Dendrogram using Average Linkage (Between Groups)

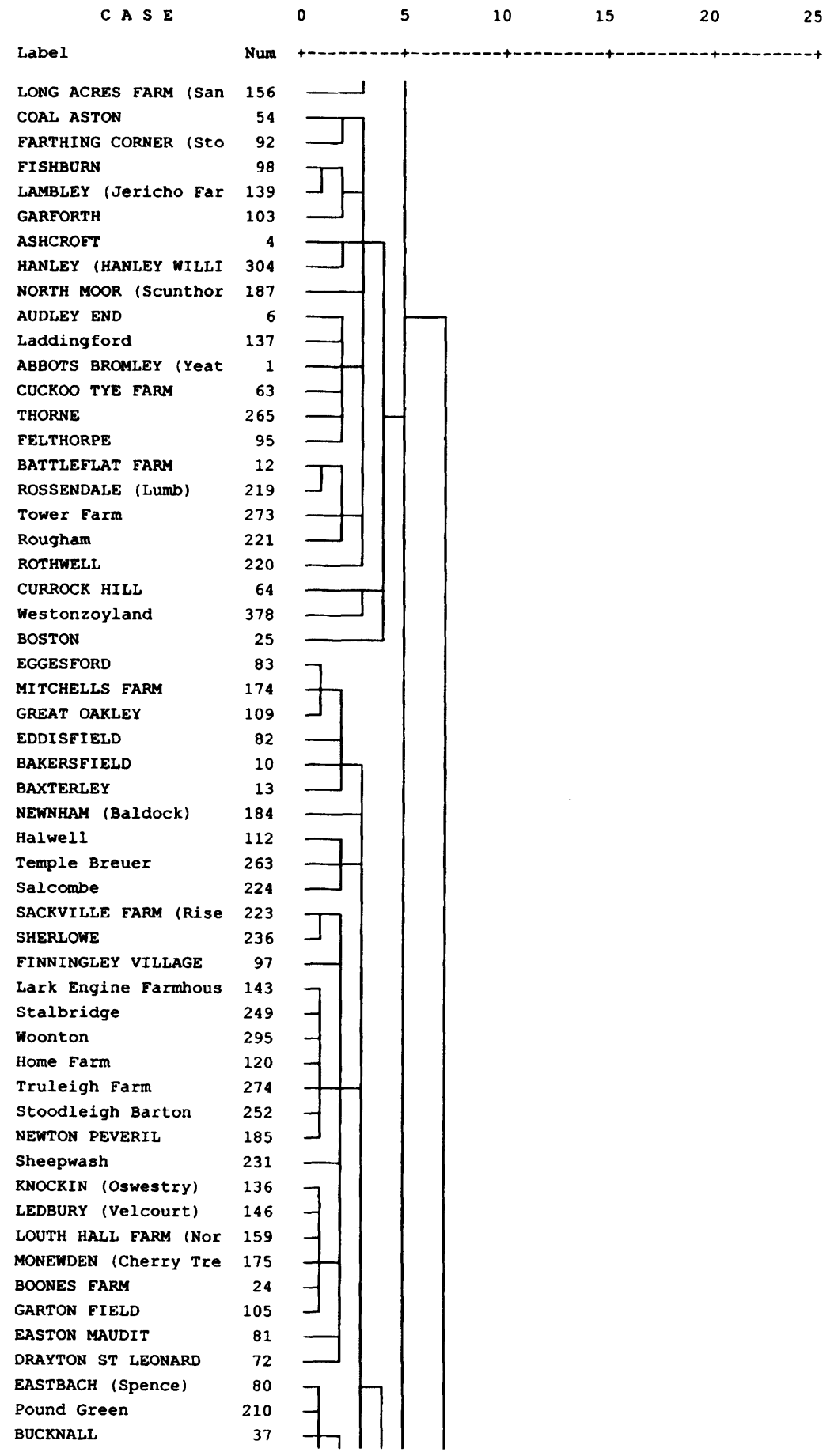
Rescaled Distance Cluster Combine

CASE Label	Num	0	5	10	15	20	25
Pear Tree Farm (Oxon	364	┐					
Stow	368	┤					
Willow Farm	379	┤					
Ettington	328	┤					
Grassthorpe Grange	336	┤					
Melbury	355	┤					
Low Farm	347	┤					
Manor Farm Airfield	352	┤					
Manor Farm (Compton	351	┤					
Lodge Road Airstrip	346	┤					
Trenholme Farm	371	┤					
Twycross (Gopsall Ho	372	┤					
Kingfishers Bridge	344	┤					
Redmoor Farm	366	┤					
Grove Farm	338	┤					
Keyston	343	┤					
Orange Grove - Chave	360	┤					
Cliffe	323	┤					
Lydeway Field	349	┤					
Berrow	312	┤					
Wallis International	373	┤					
Holly Meadow Farm	341	┤					
Brook Farm (Boylesto	317	┤					
Dowland	327	┤					
Bowerswaine Farm	315	┤					
Chilsfold Farm	321	┤					
Pent Farm	365	┤					
Gorrelfarm	334	┤					
Henscott Farm	340	┤					
Wadswick Strip	279	┤					
Hook	121	┤					
Calcot Peak	320	┤					
Alcester Airfield	309	┤					
Payden Street	362	┤					
Croft	326	┤					
Jackrells Farm	342	┤					
Wellcross Farm	375	┤					
Bedford (Castle Mill	310	┤					
Milton	357	┤					
Benington Strip	311	┤					
Brookfield Farm	319	┤					
Exning	329	┤					
Newnham Grounds	358	┤					
Four Lanes	333	┤					
Fanners Farm	330	┤					
Old Hay Airfield	359	┤					
Grangewood	335	┤					
Binstead	313	┤					
Swanborough Farm	369	┤					
Haywood (Broadmeadow	339	┘					

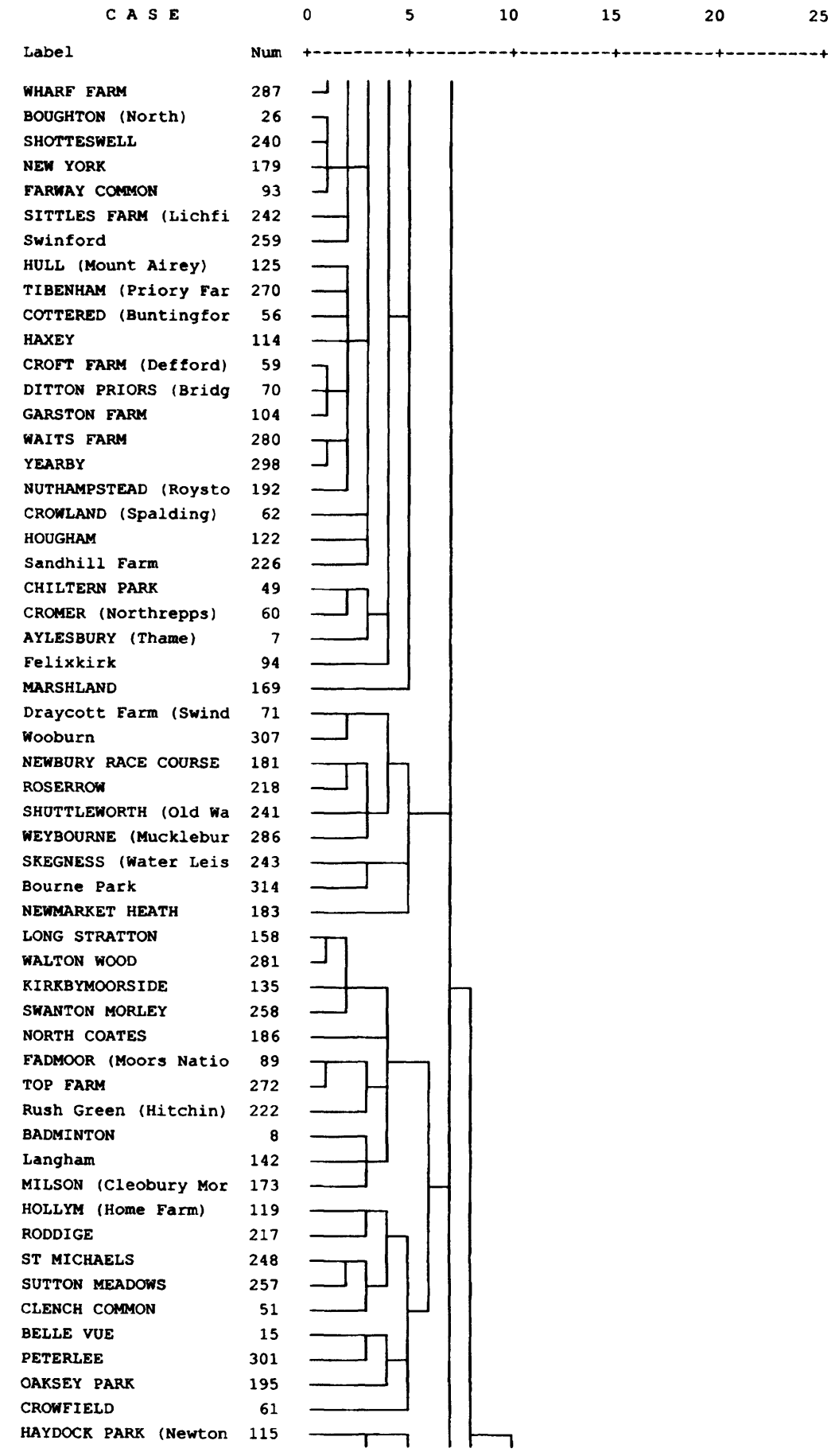
* * * * * * H I E R A R C H I C A L C L U S T E R A N A L Y S I S * * * * * *



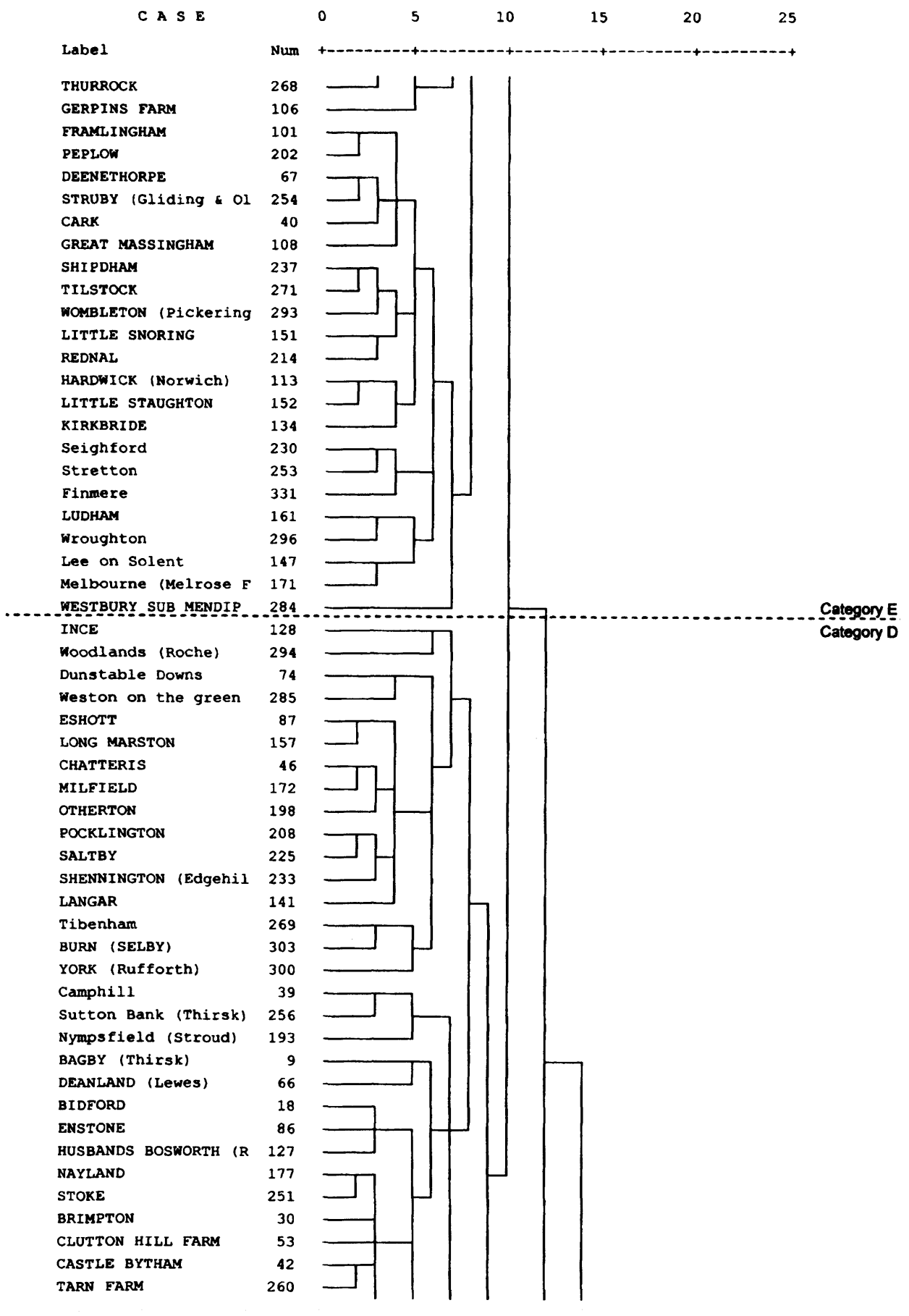
* * * * * * H I E R A R C H I C A L C L U S T E R A N A L Y S I S * * * * * *

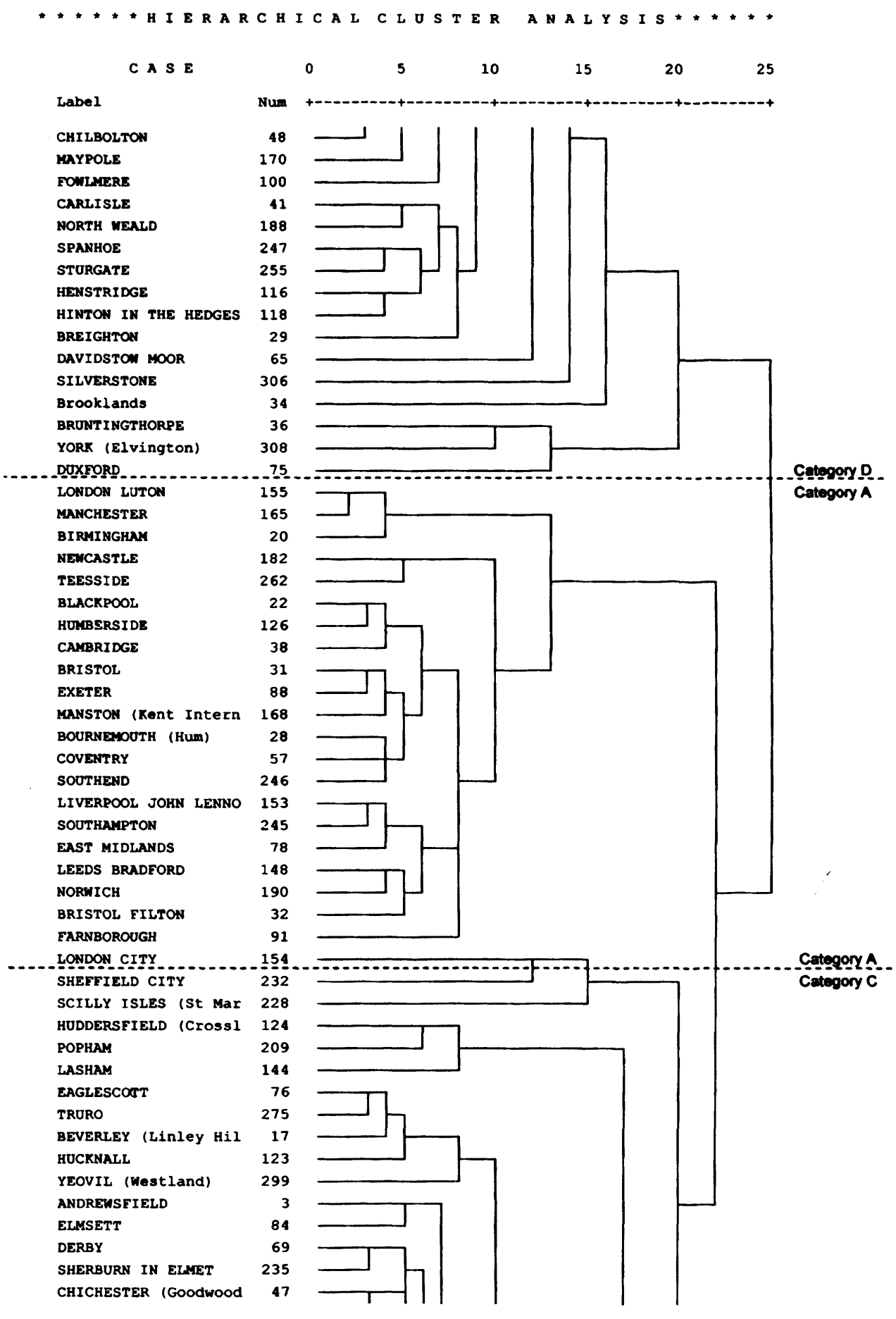


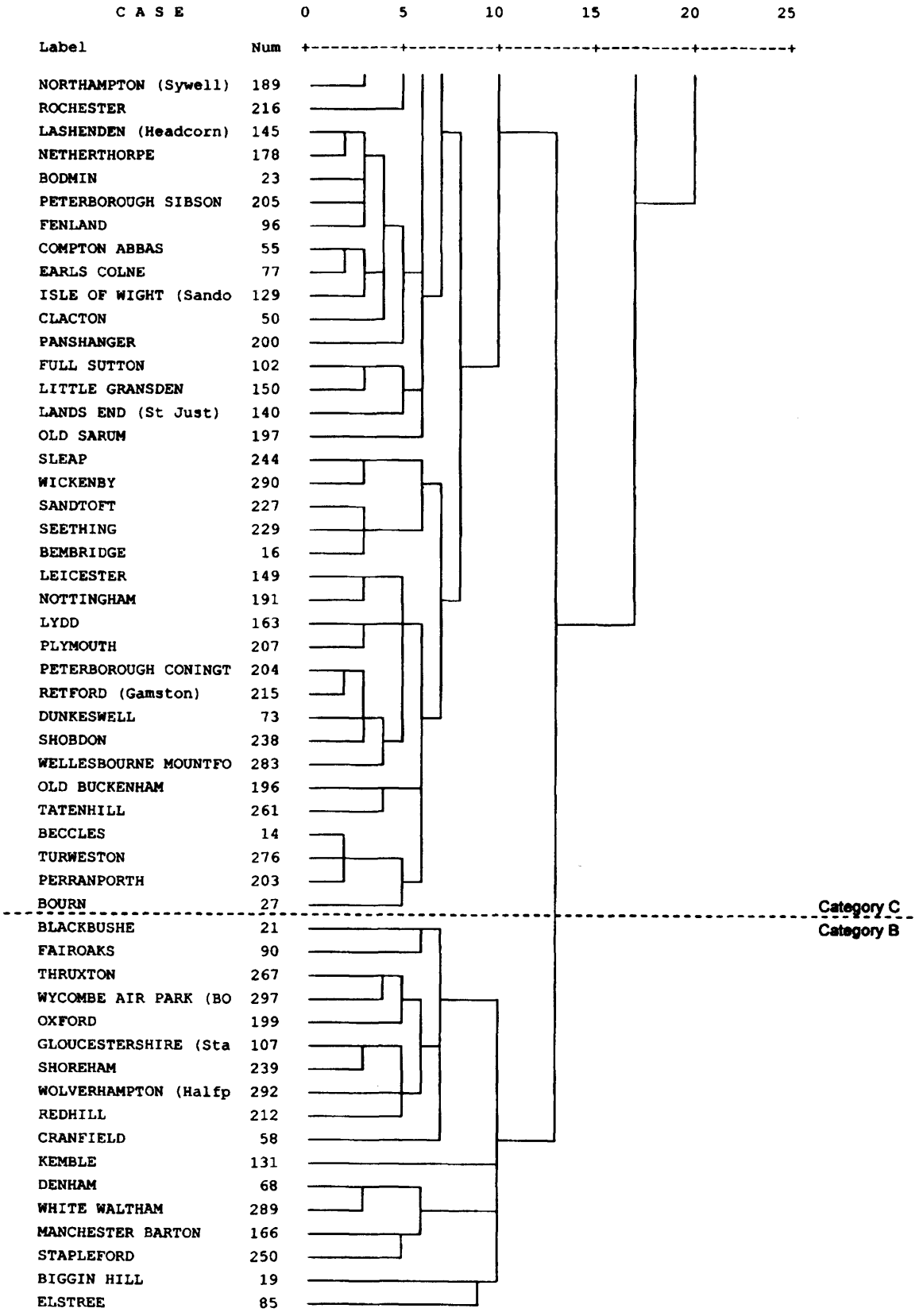
* * * * * * H I E R A R C H I C A L C L U S T E R A N A L Y S I S * * * * * *



* * * * * * H I E R A R C H I C A L C L U S T E R A N A L Y S I S * * * * * *




* * * * * * H I E R A R C H I C A L C L U S T E R A N A L Y S I S * * * * * *
C A S E
Label Num
0 5 10 15 20 25
CHILBOLTON 48
MAYPOLE 170
FOWLMERE 100
CARLISLE 41
NORTH WEALD 188
SPANHOE 247
STURGATE 255
HENSTRIDGE 116
HINTON IN THE HEDGES 118
BREIGHTON 29
DAVIDSTOW MOOR 65
SILVERSTONE 306
Brooklands 34
BRUNTINGTHORPE 36
YORK (Elvington) 308
DUXFORD 75
LONDON LUTON 155
MANCHESTER 165
BIRMINGHAM 20
NEWCASTLE 182
TEESSIDE 262
BLACKPOOL 22
HUMBERSIDE 126
CAMBRIDGE 38
BRISTOL 31
EXETER 88
MANSTON (Kent Intern 168
BOURNEMOUTH (Hum) 28
COVENTRY 57
SOUTHEND 246
LIVERPOOL JOHN LENNO 153
SOUTHAMPTON 245
EAST MIDLANDS 78
LEEDS BRADFORD 148
NORWICH 190
BRISTOL FILTON 32
FARNBOROUGH 91
LONDON CITY 154
SHEFFIELD CITY 232
SCILLY ISLES (St Mar 228
HUDDERSFIELD (Crossl 124
POPHAM 209
LASHAM 144
EAGLESCOTT 76
TRURO 275
BEVERLEY (Linley Hil 17
HUCKNALL 123
YEOVIL (Westland) 299
ANDREWSFIELD 3
ELMSETT 84
DERBY 69
SHERBURN IN ELMET 235
CHICHESTER (Goodwood 47
Category D
Category A
Category A
Category C


C A S E
0 5 10 15 20 25
Label Num
NORTHAMPTON (Sywell) 189
ROCHESTER 216
LASHENDEN (Headcorn) 145
NETHERTHORPE 178
BODMIN 23
PETERBOROUGH SIBSON 205
FENLAND 96
COMPTON ABBAS 55
EARLS COLNE 77
ISLE OF WIGHT (Sando 129
CLACTON 50
PANSHANGER 200
FULL SUTTON 102
LITTLE GRANSDEN 150
LANDS END (St Just) 140
OLD SARUM 197
SLEAP 244
WICKENBY 290
SANDTOFT 227
SEETHING 229
BEMBRIDGE 16
LEICESTER 149
NOTTINGHAM 191
LYDD 163
PLYMOUTH 207
PETERBOROUGH CONINGT 204
RETFORD (Gamston) 215
DUNKESWELL 73
SHOBDON 238
WELLESBOURNE MOUNTFO 283
OLD BUCKENHAM 196
TATENHILL 261
BECCLES 14
TURWESTON 276
PERRANPORTH 203
BOURN 27
Category C
Category B
BLACKBUSHE 21
FAIROAKS 90
THRUXTON 267
WYCOMBE AIR PARK (BO 297
OXFORD 199
GLOUCESTERSHIRE (Sta 107
SHOREHAM 239
WOLVERHAMPTON (Halfp 292
REDHILL 212
CRANFIELD 58
KEMBLE 131
DENHAM 68
WHITE WALTHAM 289
MANCHESTER BARTON 166
STAPLEFORD 250
BIGGIN HILL 19
ELSTREE 85

APPENDIX B: GA direct expenditure (additional information)

Introduction: This appendix provides additional information concerning the calculation of GA Direct Expenditure (Lober, 2006c). As explained in the body of the thesis, for the purposes of calculating the annual Direct Expenditure involved with GA activity, the following estimate was based on a formula assuming variable, semi-variable and fixed costs associated with each aircraft listed in the aircraft dataset that was established from CAA and other sources. The starting point had been to consider the classical elements of aircraft costs:

- *Operating costs* – aircraft insurance, hangarage, fuel and maintenance
- *Financing costs* – loan servicing (or interest foregone on cash investment)
- *Depreciation costs* – reserves in anticipation of replacement

Although, each of these costs can be estimated from details of the aircraft involved, it was not clear at first how to estimate other costs associated with flying, particularly the overheads and profit generated by companies and sole traders. Indeed during the field visit phase almost none of the participants were prepared to divulge information about overheads and profit levels. Also, whilst profit was clearly the difference between sales and expenditure, it was not assumed that businesses consistently included reserves for depreciation or expected their profits to be greater than if they had simply invested their capital in a savings account. The conclusion was that the only costs, which could reliably be allocated to businesses, were operating costs. How businesses absorbed financing, depreciation and overhead costs (advertising, rents, staff etc.), and then produced a pre tax profit was not accessible from the research data. Consequently, a methodology was developed that overcame these issues, by deducing gross operating margins from sales and costs. In this analysis the gross operating margin is defined as the difference between sales and operating costs. Out of this margin, businesses were assumed to pay their administrative overheads, service loans and accrue depreciation funds, ideally leaving a pre-tax profit, which reflected their capital investment.

A slightly different approach was applied to private pilots owning an aircraft, either personally or through a group share scheme. They were assumed not to incur any administrative costs or generate profit, but it was assumed they would have to absorb depreciation and financing costs. It was assumed that unlike businesses, private individuals would draw upon their personal finances – either by saving to offset depreciation, or taking out a loan and then paying interest. Consequently in the following depreciation and financing costs have been calculated directly for those operating private aircraft, whilst for businesses, it was assumed they would be funded by gross operating margins. To complete the picture of GA expenditure, other cost elements were added to estimate direct aircraft expenditure:

- *Associated GA activities* – income from air shows, museums etc.
- *Trip related costs* – landing fees and pre / post flight expenses
- *Aircraft sales expenditure* – aircraft sales expenses / incremental aircraft investment.

Aircraft sales expenditure relates to buying and selling used aircraft (sales commission/ advertising costs) and any incremental aircraft investment. The latter term is

used in this analysis to account for expenditure on new aircraft in excess of the simple replacement of decommissioned aircraft. The underlying principle was that the sum total of depreciation funds accounted from elsewhere in the estimate would ultimately be used to replace aircraft that are no longer serviceable. In other words the total capital value of the GA fleet would neither increase nor decrease and so no "new" expenditure was involved. However, given the total number of GA aircraft has increased by 4.5% p.a., it was assumed that the capital value of the GA fleet has also increased; and that any "new" expenditure needed be added to the other expenditures on GA.

Table (1) summarises the distinctions between costs incurred by those operating GA Business and GA Private aircraft. It illustrates that for most expenditures, the calculation was the same for business and private aircraft, the only exceptions were the calculations for gross operating margin and personal finances.

	Estimate Reference	GA Business	GA Private
AIRCRAFT OPERATING EXPENSES			
Insurance	1	✓	✓
Hangarage / parking	2	✓	✓
Fuel	3	✓	✓
Maintenance	4	✓	✓
GROSS OPERATING MARGIN	5		
Administrative overheads		✓	
Depreciation		✓	
Interest payable for aircraft purchase		✓	
Pre tax profit		✓	
PRIVATE FINANCES			
Financing (interest lost/payable on aircraft)	6		✓
Depreciation	7		✓
TRIP RELATED EXPENSES			
Landing fees	8	✓	✓
Pre and post flight expenses	9	✓	✓
AIRCRAFT SALES EXPENDITURE			
Incremental aircraft investment	10	✓	✓
Used aircraft sales expenses	11	✓	✓
ASSOCIATED GA ACTIVITIES	12	✓	✓

Table (1): Elements of expenditure relative to business and private aircraft

The following section explains the calculations used to estimate the spending elements listed in Table (1) and then presents the results. Data for the estimates were obtained from a variety of sources. The prime method of data collection was via a questionnaire, which was distributed to aerodrome operators and aircraft owners during the case study phase of the project, and asked respondents to provided details of their expenditure. The questionnaire, in the form of a spreadsheet, listed out the main elements of aircraft cost, from capital cost to financing and operational costs through to hire rates. Since the information gathered from these data spreadsheets was limited to the light end of aviation and the response rate was low, it was necessary to supplement data through a series of interviews and email exchanges. These included operators of larger business aircraft, insurance companies, the CAA personnel division and chief flying instructors. Other information was gathered during the case study visits and from aerodrome web sites. Where

data was unavailable, estimates based on appropriate averages were used to fill in the gaps. As covered in the main body of this thesis the following estimates of total Direct Expenditure on GA activity were reviewed and accepted by the members of the CAA's General Aviation Strategic Review (GASR) team.

1) Insurance

Aircraft insurance was found to be specific to the individual aircraft and owner/pilot(s) insured. Amongst other factors it varied according to the aircraft type, weight, value, number of passenger seats, limited liability, use, pilot age and qualifications. As it was impossible to take all these factors into consideration the approach taken was to obtain a series of quotations across different types of aircraft and to establish a line of best fit. Quotations were provided, purely as a guide, by Besso Limited, a leading aircraft insurance company (Besso, 2006). By averaging across aircraft in the same aircraft category, seven benchmark insurance premiums were established. Taking into account recent legislation which had fixed levels of passenger liability for aircraft under 999kgs, it was found that the main factors influencing premiums were the number of passenger seats and the capital value of the aircraft; as given by the following equation where A and B are empirically determined constants:

*Premium = (if MTOW<999, 2, number of passengers + 1) * A + aircraft value * B*

The GA Direct Expenditure model, containing details of all 21,459 aircraft listed in earlier reports, was set up to harmonize with the benchmark premiums. The values for the constants A and B were determined empirically using a 'goal seek' function. As Table (2) illustrates the above simple equation provided reasonable levels of accuracy, ensuring the average premium within each category closely matched the benchmarked premium and minimised the absolute variance across all the aircraft within a group. For example, across the first four categories in Table (2) the absolute variance (i.e. the difference between benchmark and resultant premiums, multiplied by the number of aircraft involved) equalled zero. A value of 700 for the constant A appeared to be applicable across all fixed wing aircraft, whilst a 0.9% value for constant B applied across all the light aircraft categories. Turbine and helicopter categories required significantly higher values for the constants, presumably reflecting the perceived risks associated with speed and technical complexity.

Aircraft Category	Benchmark Premium	Constants A	B	Resultant Premium	% Var.
Glider	1,500	700	0.9%	1,469	-3%
Microlight twin seat	1,245	700	0.9%	1,288	3%
FWLP Single Engined Piston under 750kg	1,703	700	0.9%	1,556	-9%
FWLP Single Engined Piston over 750kg	2,996	700	0.9%	3,067	2%
FWLP Turbine Engined 5700 - 50000kg	39,781	700	1.2%	39,781	-
Helicopter under 750kg	8,000	2600	2.4%	7,950	-1%
Helicopter 750 - 5700kg	25,000	3750	2.4%	25,028	-

Table (2): Constants used to calculate aircraft insurance premiums

The constants in Table (2) were then applied across all remaining aircraft categories. If an aircraft was known to be inactive (hours flown = zero) then only constant B was applied, to reflect the cost of insuring a stored aircraft. In this way the total annual expenditure on

aircraft insurance was estimated, as indicated by Table (3); which also shows the average premium per aircraft category. The total expenditure for aircraft insurance was estimated to be £106 million.

2) Hangarage/Parking

Table (3) also shows the expenditure estimated for aircraft hangarage/parking and storage. Like insurance, hangarage costs were found to vary according to a number of factors. Floor space costs varied from region to region and from site to site. Hangarage cost was also found to be a function of utilisation, demand, aircraft size and manoeuvrability. It was established during the field visits that several of the larger aerodromes, catering for heavier aircraft, used a sliding scale based on aircraft weight. This principle was extended to lighter aircraft, using the average weight for each category. The results were tested against the costs reported, adjusted to minimise the difference, and a set of standard hangarage costs established across the range of GA aircraft.

Aircraft Category	..... Insurance		...Hangarage/Parking ..	
	/ Aircraft*	Total £000s	/ Aircraft*	Total £000s
Airship/Balloon	2,069	3,463	797	1,288
Glider	1,469	4,290	600	1,751
Gyroplane	761	189	1,225	332
Microlight single seat	704	343	906	468
Microlight twin seat	1,288	4,412	1,028	3,657
FW Amphibian/Seaplane	2,707	69	2,289	109
FW Self-launching Motor Glider	1,752	472	1,486	446
FWLP Single Engined Piston under 750kg	1,556	4,655	1,436	4,593
FWLP Single Engined Piston over 750kg	3,067	16,508	1,691	14,524
FWLP Multi Engined Piston under 5700kg	6,262	5,183	1,690	2,925
FWLP Multi Engined Piston over 5700kg	20,498	848	2,638	885
FWLP Turbine Engined under 5700kg	24,094	6,903	1,948	1,641
FWLP Turbine Engined 5700 - 50000kg	39,781	13,392	1,783	6,882
FWLP Turbine Engined 50000 - 100000kg	269,943	11,712	3,568	3,828
FWLP Turbine Engined over 100000kg	-	241	-	19
Helicopter under 750kg	7,950	2,478	1,446	1,042
Helicopter 750 - 5700kg	25,028	24,628	1,409	4,621
Helicopter over 5700kg	105,562	6,455	1,052	1,244
Uncategorised Aircraft		9		500
Total		106,249		50,755
GA Business		*71,898*		*26,302*
GA Private		*34,351*		*24,454*

* *Annual Cost per Active Aircraft*

Table (3): Insurance & hangarage costs per active aircraft and total expenditure

The same approach was taken to establish costs for aircraft parking. Since not all aircraft are permanently hangared, particularly lighter ones, the annual hangarage cost was adjusted across these categories to reflect grass parking equivalent to 40% of the year. It was felt this adjustment would also accommodate the observation that many light aircraft were kept in low cost hangars and situations, at least compared to heavier aircraft. Charges for inactive aircraft were based on half the normal rate. Table (3) shows the estimated total expenditure on aircraft hangarage and parking was estimated as £51 million.

3) Fuel

With the exception of balloons, aircraft fuel usage rates were based on performance data contained in BBGA's "Blue Pages" (BBGA, 2005). Details of 293 different variants of GA aircraft were grouped according to the established aircraft categories and the fuel burnt per hour was averaged, across each category, using maximum fuel capacity, speed and range data. Balloon fuel costs were based on information published by Cameron Balloons (Cameron, 2006).

Aircraft Category	Fuel Cost		Maintenance	
	/ Ac Hr*	Total £000s	/ Ac Hr*	Total £000s
Airship/Balloon	22.5	289	45.7	587
Glider	-	-	13.3	1,773
Gyroplane	22.2	33	55.7	83
Microlight single seat	10.0	35	47.3	167
Microlight twin seat	12.6	1,113	17.6	1,558
FW Amphibian/Seaplane	35.7	16	59.0	26
FW Self-launching Motor Glider	18.4	387	18.3	384
FWLP Single Engined Piston under 750kg	35.7	3,630	29.8	3,026
FWLP Single Engined Piston over 750kg	59.0	32,574	17.9	9,891
FWLP Multi Engined Piston under 5700kg	169.9	20,248	32.0	3,817
FWLP Multi Engined Piston over 5700kg	424.1	2,538	61.8	370
FWLP Turbine Engined under 5700kg	161.8	10,409	64.6	4,155
FWLP Turbine Engined 5700 - 50000kg	478.3	51,549	452.6	48,783
FWLP Turbine Engined 50000 - 100000kg	2,986.2	62,858	742.9	15,637
FWLP Turbine Engined over 100000kg	-	-	-	-
Helicopter under 750kg	30.7	1,695	34.3	1,895
Helicopter 750 - 5700kg	101.8	18,196	233.6	41,754
Helicopter over 5700kg	384.0	17,986	760.4	35,619
Uncategorised Aircraft	22.5	-	45.7	-
Total		223,557		169,524
GA Business		*199,427*		*145,736*
GA Private		*24,130*		*23,788*

* *Cost per operating hour*

Table (4): Fuel and maintenance costs per operating hour and total expenditure

To establish the cost per litre of aviation gasoline, data for Avgas (TheHangar, 2006) and Jet A1 (France, 2006) was extracted from two internet websites that reported on 192 different locations within the UK. Recognising business jets need to refuel outside of the UK, where prices are generally higher, the Jet A1 cost was factored on the assumption that 40% of turbine aircraft refuel with fuel at a 25% premium to UK prices. Consequently the average Avgas and Jet A1 prices were assumed to be £1.10 and £0.44 per litre respectively. For each of the 21,459 aircraft listed, the total cost of fuel consumed was calculated using the estimated hours flown, multiplied by the fuel burnt per hour. Table (4) shows the cost of fuel, per operating hour and in total. The total expenditure on fuel was estimated to be £224 million.

4) Maintenance

Table (4) also shows the total cost of aircraft maintenance at £170 million. Using data collected from the field visit spreadsheets (see Appendix D) and interviews with business aircraft operators, benchmark costs were established for seven of the aircraft categories. Costs for lighter aircraft were collated on the basis of fixed annual costs (1/3 of the triennial C of A etc.) and variable cost (50 hour servicing, engine replacement, re-spray, contingency fund etc.). Whilst some business jet owners related to this format, others had arranged their

maintenance based on fixed contracts tied purely to hours flown. The BGA provided an annual estimate of maintenance per glider. The remaining categories were populated using these benchmark categories as a guide, and by taking into account the relative differences in MTOW. Note that, due to the fixed element, some minor categories appear to have high hourly rates, reflecting low levels of hours flown (for example a comparison between twin and single seat microlights).

Whilst Table (4) provided as a reasonable estimate of maintenance costs, it is recognised the data, particularly for those categories not benchmarked, were based on limited information. For this reason any further research into maintenance costs should consider purchasing and examining the data published by Conklin & de Decker, the US based aviation research and consulting firm (Conklindd, 2006). An inspection of sample costs provided by Conklin & de Decker suggested the maintenance data could be anglicised for use in the UK.

5) Gross Operating Margin (GA Business aircraft only)

Based on the foregoing calculations it was then possible to estimate the gross operating margin for *GA Business* aircraft. As discussed in the main thesis, the margin was defined as the difference between aircraft operating costs and sales; with the latter due to the hiring or charter of aircraft and pilot training.

Aircraft Category	GA Business		GA Private	
	Aircraft	Total £000s	Aircraft	Total £000s
Airship/Balloon	509	2,230	1,270	3,106
Glider	821	5,042	2,111	2,768
Gyroplane	30	70	245	487
Microlight single seat	17	29	500	901
Microlight twin seat	155	571	3,415	9,764
FW Amphibian/Seaplane	10	91	18	120
FW Self-launching Motor Glider	47	447	226	1,231
FWLP Single Engined Piston under 750kg	335	2,305	2,772	13,219
FWLP Single Engined Piston over 750kg	2,139	37,556	3,398	35,369
FWLP Multi Engined Piston under 5700kg	615	24,498	338	7,195
FWLP Multi Engined Piston over 5700kg	64	4,286	9	170
FWLP Turbine Engined under 5700kg	236	19,637	79	3,034
FWLP Turbine Engined 5700 - 50000kg	338	112,572	57	6,835
FWLP Turbine Engined 50000 - 100000kg	65	90,401	7	1,544
FWLP Turbine Engined over 100000kg	7	-	-	-
Helicopter under 750kg	199	4,772	120	2,301
Helicopter 750 - 5700kg	760	72,820	295	15,941
Helicopter over 5700kg	60	60,947	3	336
Uncategorised Aircraft		-	189	-
Total	6,407	438,276	15,052	104,320
Relative Split:	*30%*	*81%*	*70%*	*19%*

Table (5): Operational Costs split by active business and private aircraft

The first task was to split the foregoing expenditures by *GA Business* and *GA Private*. Table (5) shows the split relative to aircraft and total operating costs. It revealed that, although in numbers of aircraft *GA Private* represents 70% of the total *active* GA fleet, in terms of operational expenditure it accounts for only 19%.

The approach taken to estimate the total revenues from *GA Business* aircraft was similar to that used to estimate operating expenditures. Benchmark charter and hire costs were established for six of the aircraft categories, two from each of the three major categories.

This was partially achieved through an analysis of 925 smaller aircraft listed for hire in the Flyer magazine (Flyer, 2005b) and partially by a set of charter rates for larger aircraft as supplied by Hunt and Palmer, a leading aircraft charter company (Harvey, 2006). Table (6) shows how sales from aircraft hiring/ charter were estimated for these six aircraft categories, then compared with the operational cost to estimate a gross margin from the hire of aircraft.

It suggests that some categories of aircraft generate higher gross margins than others. The lowest margin (actually a loss) was evident for piston aircraft over 750kg, whilst the highest margin was for medium sized business jets. To smooth out these differences, three margin percentages were calculated for the three major categories of aircraft examined, expressed in terms of 'cost plus'. These were 10% for piston aircraft, 80% for turbine aircraft and 16% for helicopters.

	No. Hours	Hire £ / hr	Sales £000's	Oper'l Cost	Hire Margin	Cost+ %
PISTON AIRCRAFT						
FWLP Single Engined Piston over 750kg	346,070	102	35,209	37,556	- 2,347	
FWLP Multi Engined Piston under 5700kg	96,911	339	32,839	24,498	8,341	
			68,048	62,054	5,994	10%
TURBINE AIRCRAFT						
FWLP Turbine Engined 5700-50000kg	106,161	2,150	228,246	112,572	115,674	
FWLP Turbine Engined 50000-100000kg	21,049	6,500	136,820	90,401	46,419	
			365,066	202,974	162,093	80%
HELICOPTERS						
Helicopter under 750kg	40,742	178	7,260	4,772	2,488	
Helicopter 750-5700kg	158,807	522	82,859	72,820	10,038	
			90,119	77,592	12,526	16%

Table (6): Calculation of gross operating margin for six aircraft categories

The three 'cost plus' percentages were then applied across the complete range of *GA Business* aircraft. It was assumed the same margins to be found with piston aircraft would apply across microlight, glider and balloon activities. Table (7) shows the total gross margin generated by hiring/chartering out aircraft as £211 million.

Aircraft Category	Operational Cost £000's	Cost+ %	Estimated Hire Margin £000's
Airship/Balloon	2,230	10%	235
Glider	5,042	10%	687
Gyroplane	70	10%	8
Microlight single seat	29	10%	3
Microlight twin seat	571	10%	59
FW Amphibian/Seaplane	91	10%	9
FW Self-launching Motor Glider	447	10%	45
FWLP Single Engined Piston under 750kg	2,305	10%	236
FWLP Single Engined Piston over 750kg	37,556	10%	3,779
FWLP Multi Engined Piston under 5700kg	24,498	10%	2,487
FWLP Multi Engined Piston over 5700kg	4,286	10%	445
FWLP Turbine Engined under 5700kg	19,637	80%	15,921
FWLP Turbine Engined 5700 - 50000kg	112,572	80%	90,798
FWLP Turbine Engined 50000 - 100000kg	90,401	80%	73,690
FWLP Turbine Engined over 100000kg	-	-	207
Helicopter under 750kg	4,772	16%	767
Helicopter 750 - 5700kg	72,820	16%	11,705
Helicopter over 5700kg	60,947	16%	9,755
Total	438,276		210,839

Table (7): Estimated margin for hiring/chartering out GA Business aircraft

Although the margins for piston and helicopters appear to be significantly less than those for business aviation turbines, many of these businesses include pilot training organisations, which hire out aircraft as part of a training package. On top of a return from hiring out the training aircraft, it is reasonable to assume these businesses generate margins from training, via the employment of training instructors and the sale of training hours (as against the sale of aircraft hours). The sales generated by these instructors, needed to be added to the above margin to obtain the total gross margin.

To value training sales it was necessary to use the average number of hours pilots took to gain the basic pilot training qualifications, rather than assume just the minimum requirement. Several flying instructors were asked for their opinion and an average of 65 hours emerged. This average was said to apply to professional pilots as well as private pilots since professional pilots also needed to use GA aircraft and instructors to gain their basic qualifications and experience. The average was applied to the number of students gaining a private or professional qualification last year as in Table (8). The statistics for licences issued was taken from the CAA web site, where it suggests 5,590 PPLs and CPL/ATPLs were issued last year (CAA, 2006b).

	2004/2005 Licences Issued	Average GA Hours	Adjustment Factor*	Hours Generated	Sales / Hour £	Total Sales £000's
PRIVATE						
Aeroplane	2,823	65	0.8 *	146,796	32.26	4,735
Helicopters	367	65	0.8 *	19,084	158.06	3,016
PROFESSIONAL						
Aeroplane	2,211	65	0.4 **	57,486	32.26	1,854
Helicopters	189	65	0.4 **	4,914	158.06	777
	5,590			228,280		10,383

* adjusts for 20% PPL students trained overseas
** further adjusts for 50% of students already have PPL

Table (8): Estimated income for pilot training using GA aircraft

Table (8) includes adjustments for students who were largely trained overseas (i.e. mainly the US) and for professional pilots who first qualified for a PPL; 20% was allowed for students training abroad and 50% of professional pilots at first gaining a PPL. Both these assumptions were applied to illustrate the principle, and were not based on any informed data, although a check conducted by the CAA Personnel Licensing Department (CAA, 2006b) confirmed that, of 2,400 professional licenses issued, at least 1,020 had previously held a PPL relevant to the professional application.

Based on the survey of 925 aircraft listed in *The Flyer* magazine, a rate was established for training on aeroplanes and helicopters. The *Sales/Hour* rate used in Table (8) was based on the difference between a hire rate and a rate for training. As Table (8) shows, it was estimated pilot training organisations generate an additional £10 million, which contributes to the gross operational margin for operating aircraft, bringing the total to £221 million. Whilst £10 million may not appear to be a significant number set against costs, if it is distributed

between owners of light aircraft and helicopters, it has the effect of increasing the cost plus margin from 10% to 20% and from 16% to 19% respectively.

6) Financing (GA Private aircraft only)

Since business operators were assumed to finance their aircraft from gross operating margins, the following calculation was aimed at the private aircraft owner, even though during the case study visits it was evident not all pilots considered the cost of financing their investment as an expense. For this report, finance is considered an expense – one that is either incurred as a result of taking out a loan or, if the aircraft was purchased with cash, as a source of lost interest. Using the capital values described in Chapter Five, an annual financing charge was calculated for the 15,052 *GA Private* aircraft, listed in Table (5). An interest rate of base rate plus 1.5% was used (6.0%). Those aircraft financed by a loan may be subjected to a higher rate, but equally owners who purchased their aircraft using their own funds may be satisfied with a lower rate. Table (9) shows the annual cost per aircraft and total GA expenditure associated with financing costs. The total cost to finance the *GA Private* fleet (with a capital value of £1,143 million) equates to £68 million per year, a figure incidentally, nearly three times the expenditure on fuel by private aircraft owners.

Aircraft Category	Financing		Depreciation	
	/ Aircraft	Total £000s	/ Aircraft	Total £000s
Airship/Balloon	796	1,011	524	665
Glider	254	535	135	285
Gyroplane	876	214	556	136
Microlight single seat	202	101	134	67
Microlight twin seat	713	2,434	482	1,647
FW Amphibian/Seaplane	6,497	118	3,766	69
FW Self-launching Motor Glider	3,513	794	1,884	426
FWLP Single Engined Piston under 750kg	3,497	9,692	1,872	5,190
FWLP Single Engined Piston over 750kg	7,547	25,647	3,854	13,095
FWLP Multi Engined Piston under 5700kg	10,281	3,472	5,734	1,936
FWLP Multi Engined Piston over 5700kg	28,845	263	21,934	200
FWLP Turbine Engined under 5700kg	84,867	6,725	78,770	6,242
FWLP Turbine Engined 5700 - 50000kg	139,475	7,949	157,174	8,957
FWLP Turbine Engined 50000 - 100000kg	567,321	3,713	638,359	4,178
FWLP Turbine Engined over 100000kg		-		-
Helicopter under 750kg	8,321	1,000	1,144	138
Helicopter 750 - 5700kg	14,535	4,292	1,960	579
Helicopter over 5700kg	55,544	172	20,907	65
Uncategorised Aircraft	171	23	92	13
Total	796	68,157		43,887

Table (9): Financing and depreciation costs per operating hour and total expenditure

7) Depreciation (GA Private aircraft only)

Table (9) also presents the estimates for *GA Private* aircraft depreciation, again another cost some operators prefer to ignore. The calculation for depreciation was based on the capital values and market trend curves included in the main thesis, Chapter Five. Using the market trend curves, the capital value of each of the 15,052 aircraft was recalculated, as if they were one year older. The difference in cost was taken to be the likely depreciation. Note that for the purposes of this annual cost, the effect of inflation is taken to be included in the market trend data; in that increased new aircraft costs are echoed in the used aircraft market.

Only aircraft older than 50 years were not depreciated. Table (9) shows the depreciation cost of the *GA Private* fleet as £44 million per annum.

8) Landing Fees

The calculation for landing fees applies to both *GA Business* and *GA Private* aircraft. Based on case study information and data available from aerodrome web sites, a set of standard landing fees by aircraft category was developed. For larger aircraft, generally above 5700kg, the fees varied by weight. In this calculation the fees were based on average weights and average rates. The landing fees were then applied to the number of movements, as established by the third paper in this series. Table (10) shows the results in terms of the assumed landing fee per movement and the total expenditure on landing fees for both business and private aircraft, at £123 million.

9) Pre/Post Flight Expenses

Table (10) also shows the total estimate for pre and post flight expenses. Two types of expenditure have been assumed. The first was the cost of travelling by car to and from the aircraft's home aerodrome. The cost was based on information from the *National Pilot Survey* which found that 50% of pilots live within 18 miles of their aerodrome. This average journey was valued at forty pence per mile and applied to pilots and passengers alike; based on 75% of possible car journeys (to allow for car sharing).

Aircraft Category	Total Movements	Landing Fee / Landing	Landing Fee Total £000s	Pre / Post Flight £000's
Airship/Balloon	36,217	10	181	1,354
Glider	606,474	6	1,819	3,930
Gyroplane	4,185	9	19	27
Microlight single seat	8,587		39	56
Microlight twin seat	215,653	9	988	1,397
FW Amphibian/Seaplane	1,232	9	9	27
FW Self-launching Motor Glider	59,241	15	300	384
FWLP Single Engined Piston under 750kg	336,926	10	2,014	2,236
FWLP Single Engined Piston over 750kg	1,554,292	12	11,972	22,540
FWLP Multi Engined Piston under 5700kg	368,098	15	4,475	13,879
FWLP Multi Engined Piston over 5700kg	16,855	24	2,158	2,529
FWLP Turbine Engined under 5700kg	181,170	256	8,962	10,975
FWLP Turbine Engined 5700 - 50000kg	303,592	99	34,419	38,228
FWLP Turbine Engined 50000 - 100000kg	59,287	227	25,889	10,672
FWLP Turbine Engined over 100000kg	-	-	-	-
Helicopter under 750kg	145,866		1,459	945
Helicopter 750 - 5700kg	589,902	20	13,008	19,521
Helicopter over 5700kg	154,589	44	15,312	27,813
Total	4,642,167		123,025	156,512
GA Business			*111,766*	*138,394*
GA Private			*11,260*	*18,118*

Table (10): Landing fees and pre/post flight expenses

The second type of expenditure was that spent at aerodromes to purchase refreshments. The *National Pilot Survey* sought to establish an average expenditure on landing at another aerodrome. The results were higher than expected, indicating an average spend of £20 per visit. In this report, a more conservative figure of £3.00 has been assumed for all aircraft less than 5,700 kg MTOW. For aircraft above this weight, each occupant was assumed to spend the £20 found in the survey; in the knowledge these larger aircraft were

generally used for business trips, and long range flights. The calculation also allowed for the fact that 50% of light aircraft flights do not land at another aerodrome, and the opportunity to spend was only likely to occur during the 84% of movements, which used aerodromes with formal facilities (A, B, C or D category aerodromes). Again it was limited to 75% of available seats on each flight. Using these levels of expenditure per flight and based on the number of flights taken, the total expenditure on pre and post flight expenses was estimated to be £157 million. Within this total, most of the expenditure was clearly related to *GA Business* aircraft, as shown by Table (10).

10) Incremental Aircraft Investment

To estimate the incremental change in the capital value of the GA fleet, the CAA data previously provided (CAA 2005d) was analysed to establish net changes in aircraft registrations, over a twenty-one month period from end December 2003 to September 2005, as detailed in Table (11). During this period 345 aircraft were de-listed from the register and 701 added. The net change in aircraft was 356, representing a 1.4% annualised increase over the 14,983 aircraft on the register end December 2003.

Aircraft Category	Register end 2003	De-listed 2004-5	New 2004-5	Register Sept. 2005	% Net Chg. pa
Airship/Balloon	1,708	41	89	1,756	1.6%
Gyroplane	235	6	7	235	0.1%
Microlight single seat	473	17	13	468	-0.5%
Microlight twin seat	2,983	78	196	3,101	2.3%
FW Amphibian/Seaplane	13	5	10	17	20.6%
FW Self-launching Motor Glider	260	1	1	260	0.0%
FWLP Single Engined Piston under 750kg	2,678	36	88	2,730	1.1%
FWLP Single Engined Piston over 750kg	4,707	72	151	4,785	1.0%
FWLP Multi Engined Piston under 5700kg	600	23	13	590	-1.0%
FWLP Multi Engined Piston over 5700kg	18	2	-	16	-4.9%
FWLP Turbine Engined under 5700kg	126	9	14	131	2.5%
FWLP Turbine Engined 5700 - 50000kg	160	17	22	165	2.0%
FWLP Turbine Engined 50000 - 100000kg	14	4	2	11	-10.6%
Helicopter under 750kg	251	10	17	258	1.7%
Helicopter 750 - 5700kg	703	24	79	758	4.5%
Helicopter over 5700kg	59	5	4	58	-1.0%
Total	14,983	345	701	15,339	1.4%
GA Business	*4,171*	*210*	*133*	*4,248*	1.1%
GA Private	*10,812*	*491*	*212*	*11,091*	1.5%

Table (11): Changes to the CAA register 2004-2005 showing annualised net change

Using the results of this analysis, an estimate of the current average change in aircraft registrations was prepared as set out in Table (12). The estimate distinguishes between new aircraft replacing those that had been de-registered, and new aircraft that were incremental to the register. It suggests a current average level of 412 new aircraft each year; of which 197 effectively replaced de-registered aircraft and 215 were incremental to the register. All aircraft were valued on a current cost basis; valuing the sales of new G-registered aircraft, as recorded by the CAA register, at £149 million. Of this total £103 million was estimated to have been spent replacing de-registered aircraft and £46 million purchasing aircraft that were incremental to the register. It is worth recording that the average age of de-registered aircraft was 13 years, whilst predictably the average age of new aircraft on the register was 6 months.

	Aircraft			Value £000s		
	Business	Private	Total	Business	Private	Total
Aircraft replacing de-registered	76	121	197	59,794	42,914	102,708
Incremental new aircraft	73	143	215	27,276	18,754	46,029
New G-registered Aircraft	149	264	412	87,070	61,667	148,737
plus incremental new gliders	6	35	41	83	529	613
plus incremental FRAs	93	78	171	104,361	27,636	131,998
Total Additional Aircraft Sales	247	377	624	191,515	89,833	281,348
Adjustment - replacement/depreciation				- 59,794	- 43,234	- 103,028
Incremental Investment				131,720	47,239	178,959

** current estimated annualised level*

Table (12): Estimate of total new aircraft sales and incremental investment

The second part of Table (12) explains how this estimate of expenditure on G-registered aircraft was adjusted to accommodate all GA aircraft based in the UK. As discussed before, the CAA register does not include either gliders or foreign registered aircraft (FRAs). Consequently, Table (12) adjusts the totals obtained from an analysis of the CAA register, to allow for increases in gliders and FRAs. The assumption for gliders was that the same overall percentage found for powered aircraft could be applied to gliders. Accordingly, it was estimated that 41 new gliders were included in the 2,920 aircraft identified by the Air-Britain survey (Wormersley, 2005). The calculation for FRAs was based on a different assumption, using the number of foreign registered aircraft reported by Air-Britain in 2005, compared to the number reported in 2003 (Air-Britain, 2005). In 2005 there were 1,092 FRAs and in 2003 the total was 750; the difference being equivalent to 171 additional aircraft each year, or an extra 1% that is not included in the CAA register, or the statistics of Table (11). The assumption was that these aircraft are not new, but pre-owned aircraft purchased abroad or aircraft transferred from the UK register. Accordingly, the calculation assigned the same capital costs used in the Capital Value paper, based on the average age of equivalent aircraft on the UK register. Even so, the value of these additional aircraft, which as illustrated previously were weighted towards more expensive types, significantly increased the total capital values involved. The adjusted value of additional GA aircraft sales was estimated to be £281 million, as shown by Table (12). This total is not however the incremental contribution, since previous calculations have allowed for the replacement of aircraft; either as *GA Private* depreciation or in the assumption that *GA Businesses* absorbed the cost of replacement from their gross margin. Consequently the additional contribution was calculated net of expenditure on replacement aircraft, arriving at a total of £179 million as shown in Table (12).

11) Used Aircraft Sales Expenses

In addition to the expenditure involved in the sale of new aircraft, expenses are incurred whenever aircraft change ownership. To evaluate the annual costs of changes in ownership (that is within the used aircraft sales market) the CAA Registration Section was asked to provide data on the number of ownership changes in recent years. Consistent with the previous calculation, the period end December 2003 to end September 2005 was analysed by aircraft category and between *GA Business* and *GA Private*. The results are

shown by Table (13). The overall turnover in ownership was found to be 16%. No statistical difference could be established between *GA Business* and *GA Private*.

Aircraft Category	Aircraft on UK Register	Changes in Ownership*	Ownership Turnover %
Airship/Balloon	1,670	116	7%
Gyroplane	245	20	8%
Microlight single seat	485	66	14%
Microlight twin seat	3,419	721	21%
FW Amphibian/Seaplane	20	3	15%
FW Self-launching Motor Glider	267	37	14%
FWLP Single Engined Piston under 750kg	2,854	386	14%
FWLP Single Engined Piston over 750kg	4,986	758	15%
FWLP Multi Engined Piston under 5700kg	604	92	15%
FWLP Turbine Engined under 5700kg	159	26	16%
FWLP Turbine Engined 5700-50000kg	201	21	10%
Helicopter under 750kg	284	83	29%
Helicopter 750-5700kg	886	255	29%
Helicopter over 5700kg	61	3	5%
	16,152	2,587	16%
GA Business	*4,536*	713	16%
GA Private	*11,644*	1,874	16%

* *Annualised from period Dec. 2003 to Sept. 2005*

Table (13): Results of an analysis of aircraft ownership changes, 2004-2005

Although Table (13) may suggest some differences between the categories, for the purposes of this estimate, the average of 16% was applied to all categories, as shown in Table (14). It suggests an estimated £600 million of used aircraft sales; a figure that incidentally significantly exceeds the G registered new aircraft sales, Table (12). Unlike new aircraft sales, however, used aircraft sales do not represent additional expenditure on GA, merely a change in title. On the other hand, any costs of selling used aircraft (advertising, commission, CAA fees etc.), do represent additional expenditure. To estimate these costs it was assumed that each change of ownership would result in an average 5% of additional expenditure, based on the capital value of the aircraft. As Table (14) indicates the estimate for used aircraft sales expenses per annum was just over £30 million.

	Capital Value £ 000s	Ownership Turnover %	Sales Value £000s	Assumed % of Sales	Aircraft Sales Expense £ 000s
GA Business	2,611,465	16%	417,834	5%	20,892
GA Private	1,143,846	16%	183,015	5%	9,151
Total	3,755,311		600,850		30,042

Table (14): Estimated second-hand aircraft sales expenses

12) Associated GA Activities

This cost was included given the foregoing analysis had not directly calculated any additional expenditure on associated GA activities, for example that due to air shows, model aircraft builders, spotters, parachuting, paragliding and hang gliding. Nor did it include expenditure by pilots on ancillary equipment found in pilot shops or any GA specific books and magazines. Accordingly, a figure of £20 million was suggested as an appropriate sum; equivalent to less than 1.5% of all other expenditures, or 36 pence per UK resident p.a.

(note: references in this appendix are included in the main thesis listing)

APPENDIX C: The local authority survey : England (additional results)

Introduction: This appendix provides the results from the Local Planning Authority survey, which were not included in the main body of the thesis, as they were not directly relevant to the arguments presented. The following presents these additional results in question order (see Appendix D).

Sections 1 & 2 – Flying sites and their broad classification

In addition to identifying individual sites with the LPA district, respondents were asked to classify according to their rurality and type of site. Table (1) shows the urban/rural nature of the sites surveyed in which it was felt 72% of sites were located away from urban areas. The more significant sites (categories A & B) were most likely to be located in an urban or urban fringe situation. Table (2) shows the respondent's description of the sites compared to the categorisation developed by the research.

	Short code	Urban Area No. Sites	Urban Fringe No. Sites	Rural No. Sites	Total No. Sites	
Category A	A	2	10	5	17	11%
Category B	B		5	7	12	8%
Category C	C	1	5	25	31	21%
Category D	D		1	16	17	11%
Category E	E		3	18	21	14%
Category F	F		3	9	12	8%
Helicopter Sites	H	1	1	1	3	2%
Military	M			5	5	3%
Unpublished	U	6	4	20	30	20%
		10	32	106	148	100%
		7%	22%	72%	100%	

Table (1): Distribution of Sites based on Urban/Rural Description

	Aerodromes by Category									Total	%
	A	B	C	D	E	F	H	M	U		
National Airport	4									4	2%
Regional Airport	12	1	1	1						15	9%
Local Aerodrome	1	10	19	4	5	2			1	42	26%
Grass Strip / Launch Site		1	9	6	13	6		1	15	51	32%
28 Day Rule Site					1	1				2	1%
Military				1		1		4	2	8	5%
Heliport				1	1		2		11	15	9%
Other			2	4	2	3	1		6	18	11%
Not Specified			2	2	2					6	4%
	17	12	33	19	24	13	3	5	35	161	100%

Table (2): Respondent classification of sites vs. research categorisation

As may be seen from Table (2), there appeared to be a reasonable alignment between the commonly used terms of Airport, Aerodrome and Grass Strip and the categories 'A' to 'F'. Additionally respondents were asked about the change in aerodrome usage over the past ten years, in order to explore the local authority's understanding about any increase or

decrease in the number of active aerodromes within their district. The results suggested there had been a growth in sites over the past ten years of 4%, however as discussed in the main thesis text there was other evidence to suggest LPA were not consistently aware of all of the sites in their districts; meaning the change noted may have been based on greater accuracy rather than a real change in aerodrome numbers.

Number of Sites reported	161	
Number of Sites not used for flying 10 years ago.	9	
Number of Sites that have ceased being used in the past 10 years	-2	
Net change	168	4%

Section 3 – Use of conditions for regulating flying

In this section respondents provided details of the planning conditions applied to individual aerodromes. This information may be found in Table (6.7) and Table (6.8) in the main thesis. Respondents were also asked how significant they thought the impact of planning regulation was on the average site. Table (3) below summarises the response. As may be seen, 10% felt it *Not significant,* including one 'A' authority. The balance felt it to be significant, including one 'F' category authority which felt it was *Very significant.*

	Authorities by Highest AD Category in District							
	A	B	C	D	E	F	Total	%
Not Significant	1		1		1	2	5	10%
Moderately Significant	2	3	3	1	2	1	12	24%
Significant	5	1	7	3	3	2	21	43%
Very Significant	3	2	3		2	1	11	22%
	11	6	14	4	8	6	49	100%
						Don't Know	7	
						Missing	26	
% indicating Significant to V.Significant	73%	50%	71%	75%	63%	50%		

Table (3): Significance of Planning to Aerodrome Operations

Sections 4 & 5 – Permanent and temporary land uses

The results of these two sections have been discussed and the results illustrated in the main text, see Table (6.4), Table (6.5) and Table (6.6).

Section 6 - References to aviation in the adopted local plan

This section was intended to provide a measure of Local Plan Output, as described in the main thesis text, see Chapter 6.3. Table (4) summarises the results by aerodrome category (results were collated by individual site).

	Aerodromes by Category A	B	C	D	E	F	Total	%
To Close site								0%
Restrict Activity	3	5	6	1	3	1	19	40%
No Impact	3	3	3	2		1	12	26%
Expand Activity	8	1	6		1		16	34%
Create New Site								0%
	14	9	15	3	4	2	47	100%
No. Sites referred to in Plans	16	8	16	4	3	4	51	
% of Total Sites	94%	67%	48%	21%	13%	31%	43%	
Plan References per Site	0.9	1.1	0.9	0.8	1.3	0.5	0.9	

Table (4): Local Plan Output - Impact on Flying by Aerodrome Category

As can be seen in Table (4), whilst no respondents reported either the impending closure or creation of sites, there were similar numbers of authorities planning to either restrict or expand activity. To calculate the measure for Local Plan Output, each aerodrome referenced in the survey was assigned a plan output value; depending whether the plan was neutral or had the effect of expanding or restricting flying (restrict =1, neutral = 0, expand =1). Data on each aerodrome was collated by authority, and the measure calculated, based on the average impact per site within an authority. As discussed in the thesis, this measure appeared to be unable to relate any difference in approach between authorities to the other factors measured.

In addition to enabling the calculation of the direct measure Local Plan Output, Section 6 asked several other related questions. Firstly, it sought to understand how many LPAs included commentary within their plans about GA or if they intended to add any. The results are shown in Table (5). Over a third of authorities said they already included a general comment upon aviation in their plans, and eight out of fifty said that they intended to add a reference in the future.

		Authorities by Highest AD Category in District A	B	C	D	E	F	Total	%
Does the adopted Plan comment upon aviation in general terms?	Yes	12	4	8	1	2	1	28	37%
	No	7	8	16	5	8	4	48	63%
		19	12	24	6	10	5	76	100%
If No, is there an intention to add general comments in the future?	Yes	1	3	3	1			8	11%
							Missing	6	
% that include general comments		63%	33%	33%	17%	20%	20%		

Table (5): Inclusion of General Comments on GA in Local Plans

Respondents were also asked if the local plan included specific comments about individual airfields. As Table (6) shows, authorities were more likely to make specific comments than general ones, with over half including a reference to individual aerodromes.

		Authorities by Highest AD Category in District							
		A	B	C	D	E	F	Total	%
Does the adopted Plan comment	Yes	18	8	10	1	2	1	40	56%
upon specific airfields?	No		4	11	4	8	4	31	44%
		18	12	21	5	10	5	71	100%
If No, is there an intention to add									
specific references in the future?	Yes	2	1	1				4	6%
							Missing	11	
% that include specific comments		100%	67%	48%	20%	20%	20%		

Table (6): Inclusion of References to Specific Aerodromes in Local Plans

	Authorities by Highest AD Category in District							
	A	B	C	D	E	F	Total	%
They Never Write	3	2	2	1	5	3	16	31%
About Once Every Ten Years			3	1	3		7	13%
About Once Every Five Years	3	4	6			1	14	27%
About Once Every Year	8	3	2	1		1	15	29%
	14	9	13	3	8	5	52	100%
						Don't Know	19	
						Missing	12	
% that write at least every Five Years	79%	78%	62%	33%	0%	40%		

Table (7): Involvement by Aerodrome Operators in Local Plans

Respondents were also asked how frequently written input about the local plan was received from local aerodrome operators. As indicated by Table (7), respondents reported that one in three authorities never received any input. Of the 50% that did write at least every five years, most of them were in the 'A' to 'C' group; as illustrated by line headed '*% that write every 5 years*'.

	Authorities by Highest AD Category in District							
	A	B	C	D	E	F	Total	%
County is Unsupportive Of GA	2	4	3				9	19%
County Takes a Balance View Of GA	9	3	13	2	7	2	36	77%
County is Very Supportive Of GA		1		1			2	4%
	11	8	16	3	7	2	47	100%
						Don't Know / Not Applicable (Unitary)	10	
						Missing	25	
% that are at least are Balanced	82%	50%	81%	100%	100%	100%		

Table (8): View of County Plans regarding GA

	Authorities by Highest AD Category in District							
	A	B	C	D	E	F	Total	%
Region is Unsupportive Of GA	3	1	3			1	8	20%
Region Takes a Balance View Of GA	8	3	7	1	5	2	26	63%
Region is Very Supportive Of GA	3	1	1	2			7	17%
	14	5	11	3	5	3	41	100%
						Don't Know / Not Applicable (Unitary)	9	
						Missing	32	
% that are at least are Balanced	79%	80%	73%	100%	100%	67%		

Table (9): View of Regional Guidance regarding GA

Finally in Section 6, respondents were asked about their view of support concerning GA from county and regional planning. Table (8) shows the extent that planners felt county planners supported GA and Table (9) if regional planning guidance provided any support. In both cases it was generally felt that overseeing authorities took a balanced view of GA, although there were more authorities where the view was *Unsupportive* than *Very Supportive*. 20% of both county and regional authorities were seen to be *Unsupportive* and county authorities were much less likely to be *Very Supportive* than regional ones.

Section 7 – Flying site safeguarding status

This section addressed the LPA's commitment to safeguarding flying sites as defined in the GPDO circular 01/2003. The main thesis text includes the responses concerning the type of safeguarding, Table (6.12) and how government advice concerning safeguarding was viewed, Table (6.9). Table (10) shows the response to the question that asked if the plan included a comment on aerodrome safeguarding. Only 23% of authorities included safeguarding within their plans (and only one had safeguarded disused sites).

		Authorities by Highest AD Category in District							
		A	B	C	D	E	F	Total	%
Does the adopted Plan comment upon the safeguarding of airfields?	Yes	13	4	5	1			23	31%
	No	4	8	19	5	11	5	52	69%
		17	12	24	6	11	5	75	100%
If No, is there an intention to add a references in the future?	Yes	1	2	3				6	8%
Are old (disused) airfields safeguarded?	Yes	1						1	1%
							Missing	8	
% that comment upon Safegarding		76%	33%	21%	17%	0%	0%		

Table (10): Inclusion of Safeguarding in Local Plans

Section 8 – Suitability of alternative land uses on active sites

This section explored the suitability of various land uses when mixed on active flying sites and asked if it was thought GA had a significant impact on local business and recreation. Responses to these questions have been discussed in the main thesis, concerning the measure *Mixed Use Tolerance*, see Chart (6.2) and Chart (6.3), where individual LPA results where compared against other measures. Table (11) however below provides the overall results, where they are ranked in the order based on the average scores obtained.

Ranking (Based on 1=Wholly unsuitable > 6=Wholly suitable)	Score
Agricultural	3.8
Air Displays / Shows	3.5
Museum / Heritage	3.3
Storage, Distribution, Manufacturing	2.5
Business / Office Development	2.5
Other Shows / festivals	2.4
Temporary Motor Sports	1.9
Sports / Leisure / Youth Centre	1.8
Race Course (Motor / Horse etc)	1.8
Car boot sales	1.6
Market Trading	1.4
Governmental (Prison, Services etc.)	1.4
Retail (Outlets) Park	0.7
Housing	0.4

Table (11): Ranked Alternative Uses for Active Sites

Sections 9 and 10 – Impacts and benefits of land used for transport and leisure

In these two sections respondents were asked to rank the impacts of a range of different land uses, from the point of view of their environment impacts and economic/social benefits. Section 9 was focussed upon the leisure use and Section 10 on transport uses. Table (12) shows the overall results for leisure activities and Table (13) for transport uses, where a higher score indicates approval (less intrusive or more beneficial). The highlighted rankings for glider and light aircraft flying sites, when compared to other leisure land uses, suggested that respondents took a balanced view of the activities. A less favourable view was taken of GA in a range of transport uses. Regional airports in particular were given the highest economic/social score yet the lowest environmental score, highlighting the dichotomy faced by planners over the use of land for GA purposes other than light leisure activity.

	Environment	Economic	Combined
School farm & visitor centre	4.7	4.1	8.7
Golf course (18 hole, with clubhouse etc)	3.8	3.5	7.4
Small grass flying strip / site for gliders	**4.2**	**2.8**	**6.9**
Equestrian centre & showground	3.4	3.2	6.6
In-land yatch marina with clubhouse etc.	3.3	3.3	6.5
Golf range with clubhouse	3.2	3.3	6.5
Small grass flying strip / site for light aircraft	**3.4**	**3.0**	**6.3**
Water sports park, including water skiing	2.5	3.3	5.8
Outdoor small bore & rifle ranges	2.2	2.6	4.8
Open air Go-Karting circuit	1.9	3.0	4.8
Motor racing / Stock car circuit	1.5	3.0	4.4
Average Difference - Flying Uses vs. Other uses =	0.8	-0.4	0.4

Table (12): Combined Ranking for Leisure Activities

	Environment	Economic	Combined
Canal / Navigable River	4.6	3.4	7.9
Commuter Rail Station & parking	2.8	4.7	7.5
Intercity Railway line	2.8	4.6	7.4
Container Sea Port	2.2	4.8	7.0
Regional Airport	**1.5**	**5.1**	**6.6**
Local aerodrome	**3.0**	**3.5**	**6.5**
Road Freight Terminal	2.0	4.4	6.4
Motorway	1.8	4.6	6.3
Urban Heliport	**2.1**	**3.9**	**6.0**
Motorway Service Area	2.2	3.6	5.7
Flight Path above 2000 feet.	**3.2**	**2.5**	**5.7**
Average Difference - Flying Uses vs. Other uses =	-0.2	-0.5	-0.7

Table (13): Combined Ranking for Transport Activities

Section 11 – Impacts: real and perceived

As described in the main thesis this final section was an expanded version of a section within the original ESRC questionnaire. It asked respondents to read seventeen statements concerning GA, and indicate the extent that they either agreed or disagreed. The overall results are shown in Table (14), where as the results by LPA were used in the thesis to calculate the measure *Common Beliefs*, see Chart (6.3) and Chart (6.5).

	Support		Average Score	
1	+ve	Airfields are best located on the outskirts of urban development & connected to local transit lines.	2.4	Strongly
2	+ve	New uses for airfields (including housing development) may generate unacceptable traffic problem	2.6	Agree
3	-ve	Noise considerations will generally outweigh any economic and social benefits resulting from flying	2.7	
4	-ve	There are more than enough airfields left over from WWII without the need to create new ones.	2.7	
5	+ve	An airfield can act as a "growth pole" for other businesses.	2.8	
6	-ve	Redundant land on airfield sites can play an important role in local development strategies.	2.9	
7	-ve	Planning applications related to airfields are more likely to reach the appeal stage than other types	3.0	
8	+ve	Local people that were born here don't complain about flying as much as those move into the area	3.1	
9	+ve	A local aerodrome can bring important high value business visitors to local towns.	3.2	
10	+ve	In ten years time, there may be about the same number of airfields for general aviation.	3.3	
11	-ve	The local airfield really only benefits a few wealthy enthusiasts from outside the district.	3.3	
12	+ve	General aviation plays a vital economic and social role in the local area.	3.4	
13	+ve	Compared to many other alternative uses for an old WWII site, an active airfield is a lesser evil.	3.4	
14	-ve	In ten years time, there may be less airfields in the region supporting general aviation.	3.5	
15	-ve	There is too much pressure from local Nimbys to allow more flying activity.	3.6	
16	+ve	Active and disused flying sites should be protected & safeguarded from new forms of development	3.7	Strongly
17	-ve	Compared to ten years ago there is now less flying activity in this district	4.3	Disagree

Table (14): Common Beliefs Ranked based on Average Score

APPENDIX D: Questionnaires used in the research

1) National Pilot Questionnaire (as distributed in GA magazine)

PILOT QUESTIONNAIRE

- The questions are intended for qualified pilots living in the UK
- You will need to refer to your pilot log book(s).
- Use a black ballpoint pen and write clearly using capitals as necessary.
- Multiple choice questions should be answered with a diagonal line ☒ as indicated.
- Personal data will be used for research purposes only and on a strictly confidential basis.
- The term 'aerodrome' is used to describe any type of formal flying site.

Section (A)—Basic data about you and your flying

A1. Age: ☐☐ yrs.

A2. Sex: Male ☐ Female ☐

A3. Years as a qualified pilot: ☐☐ .....if less than 12 months indicate here ☐

A4. Total number of hours flown as Pilot in Command (do not include P2, P1/S & Pu/t): P1 ☐☐☐☐ Hrs.

A5. Typical number of hours flown each year as Pilot in Command: P1 ☐☐☐☐ Hrs./Year

A6. If an essential part of your employment is being a pilot, how many work related hours did you include when answering question A5? P1 ☐☐☐☐ Hrs./Year

A7. How many flight entries do you typically record in your log book each year? ☐☐☐☐

A8. Home postcode (omit the last two letters if concerned about anonymity): ☐☐☐☐☐☐☐

A9. How far away from your home is the aerodrome you use most often? ☐☐ miles ☐☐ minutes

A10. How many similar aerodromes are approximately within the same reach of where you live? ☐☐

A11. Categories of aircraft you normally pilot (draw a diagonal line ☒ against each option that applies) :

☐ Private helicopter	☐ Glider/motor glider	☐ Single-engine light a/c	☐ Warbird
☐ Commercial helicopter	☐ Paraglider/hang glider	☐ Multi-engine light a/c	☐ Biplane
☐ Executive Jet	☐ three-axis microlight	☐ Multi-engine heavy a/c	☐ Gyrocopter
☐ Commercial Jet	☐ Flexwing microlight	☐ Airship/balloon	☐ Other (specify) .....

Now make a cross ☒ to highlight the <u>one</u> aircraft category you pilot most often.

A12. Using your logbook, summarise your last 5 trips for the aircraft category highlighted with a cross in question A11.

	Recorded Duration Hrs / Mins	Persons on Board.	Did you stay away from home? Yes	No	If Yes, for how many nights?
1)	☐☐☐	☐☐	☐	☐	☐☐
2)	☐☐☐	☐☐	☐	☐	☐☐
3)	☐☐☐	☐☐	☐	☐	☐☐
4)	☐☐☐	☐☐	☐	☐	☐☐
5)	☐☐☐	☐☐	☐	☐	☐☐

A13. How is the aircraft category highlighted in question *A11* provided?

- ☐ By hiring, as needed ..... If so, how much do you normally pay per hour (wet)? £☐☐☐
- ☐ Through the organisation you work for
- ☐ As part of a co-ownership group ..... If so, how many are there in the group? ☐☐
- ☐ You are the sole owner
- ☐ Other (specify) .....

Are you listed in the CAA Aircraft register as an owner for such an aircraft? Yes ☐ No ☐

If **No**, go directly to Section B.....

A14. Approximate market value of the registered aircraft:

☐ < £5,000 ☐ £20,000 to £40,000 ☐ £80,000 to £120,000 ☐ £200,000 to £400,000
☐ £5,000 to £10,000 ☐ £40,000 to £60,000 ☐ £120,000 to £150,000 ☐ £400,000 to £1,000,000
☐ £10,000 to £20,000 ☐ £60,000 to £80,000 ☐ £150,000 to £200,000 ☐ > £1,000,000 (specify) .....

A15. Do you use a nearby GA aerodrome as a base for the registered aircraft Yes ☐ No ☐

Section (B)—Multiple choice questions about you and your flying

B1. What are your qualifications? (draw a diagonal line ☒ against each option that applies)

☐ PPL ☐ Single engine ☐ Light aircraft ☐ Night rating ☐ Tailwheel
☐ CPL ☐ Multi engine ☐ Heavy aircraft ☐ IMC ☐ Floats
☐ ATPL ☐ Microlight ☐ Jet ☐ Instructor ☐ RT licence
☐ Gyrocopter ☐ Helicopter ☐ Examiner ☐ Other (specify) .....

B2. Reasons you originally learnt to fly (draw a diagonal line ☒ against each option that applies):

☐ Worked in aviation industry ☐ Interested in flying from an early age ☐ Wanted excitement etc.
☐ Lived near an aerodrome ☐ Through joining the Services ☐ Flew with friend/relative
☐ Joined Air Cadets ☐ Wanted a retirement interest ☐ Given air experience ticket
☐ To get from A to B ☐ To become a professional pilot ☐ Other (specify) .....

Now make a cross ☒ to highlight the main reason you learnt to fly

B3. Your general job title (if you are retired, indicate here ☐ then give your title at the time of retiring):

.....

B4. Are you in full time employment? Yes ☐ No ☐

B5. Is being a pilot an essential part of your job? Yes ☐ No ☐

*If either **No**, go directly to question B11.*

B6. Approximate before tax income from your job:

☐ < £5,000 ☐ £10,000 to £20,000 ☐ £30,000 to £40,000 ☐ £60,000 to £80,000
☐ £5,000 to £10,000 ☐ £20,000 to £30,000 ☐ £40,000 to £60,000 ☐ > £80,000 (specify) .....

B7. Type(s) of flying you do as an essential part of your job:

☐ Inspection/survey work ☐ Instructing ☐ Commercial air transport
☐ Emergency services ☐ Examining ☐ Crop spraying
☐ Oil rig ☐ Air taxi/charter ☐ Personal travel A to B
☐ Aircraft testing ☐ Executive flying ☐ Other (specify) .....

Now make a cross ☒ to highlight the type of flying you do most often

If you have highlighted 'Personal travel A to B' go directly to question B10.

B8. What route did you take to become a professional pilot?

☐ Started flying for pleasure then decided to become professional ☐ Decided on an aviation career then learnt to fly

B9. How did you gain your professional qualifications?

☐ Self-improver/module route ☐ Employer-sponsored full-time training ☐ Other (specify) .....
☐ Via the Services ☐ Self-sponsored full-time training

B10. Apart from flying as part of your job, do you also fly for leisure purposes? ☐ Yes ☐ No

If No, go to Section C.

B11. Type(s) of flying you do as a leisure pilot:

☐ Flying near base aerodrome ☐ Day trips ☐ Aerobatics/formation
☐ Learning new skills ☐ More than one day trips ☐ Training others
☐ Rallies & fly-ins ☐ Visiting UK aerodromes ☐ Air racing
☐ Precision flying or dawn/dusk ☐ Visiting non-UK aerodromes ☐ Other (specify) .....

Now make a cross ☒ to highlight the type of leisure flying you do most often

B12. Approximate cost of your leisure flying each year:

☐ < £1,000 ☐ £3,000 to £4,000 ☐ £6,000 to £7,000 ☐ £9,000 to £10,000
☐ £1,000 to £2,000 ☐ £4,000 to £5,000 ☐ £7,000 to £8,000 ☐ £10,000 to £15,000
☐ £2,000 to £3,000 ☐ £5,000 to £6,000 ☐ £8,000 to £9,000 ☐ > £15,000 (specify) .....

Section (C)—About your choice of aerodromes

C1. Complete the table below for the five trips you had selected for Question A12:

Trip as Shown	Was trip work related? Yes	No	Was take-off site in the UK? Yes	No	Take-off site was? Airport	Airfield	Heliport	Private strip / pad	Other	Was landing back at the same site Yes	No	If different, site was Airport	Airfield	Heliport	Private strip / pad	Other	Was landing site outside the UK Yes	No
1)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

If 'Other' column used, specify type of site(s)……

C2. Do you normally start flights from the same aerodrome (your 'base aerodrome')? Yes ☐ No ☐
If No, for the following questions assume 'base aerodrome' means where you fly from the most.

C3. How many different aerodromes do you use, as a pilot, in an average year?
☐ 1 (base aerodrome) ☐ 4 or 5 ☐ 10 to 15 ☐ 26 to 50
☐ 2 or 3 ☐ 6 to 9 ☐ 16 to 25 ☐ < 50 (specify)……

C4. When you fly to another aerodrome what do you do (apart from refuelling & paying landing fees)?
☐ Attend organised events ☐ Visit the local area as a tourist ☐ Stay in a nearby B&B/hotel
☐ Visit for business purposes ☐ Have a meal/snack if possible ☐ Have a look around the aerodrome
☐ Wait while others do their job ☐ Simply book-in then depart ☐ Other (specify)……
Now make a cross ☒ to highlight the activity you do most often

C5. How much you spend, at the aerodrome or in the locality, per average visit (excluding landing fees & fuel)?
☐ < £5 ☐ £10 to £20 ☐ £30 to £50 ☐ £100 to £200
☐ £5 to £10 ☐ £20 to £30 ☐ £50 to £100 ☐ > £200 (specify)……

C6. What features would improve your base aerodrome?
☐ Snack bar/ restaurant ☐ Taxi service ☐ Fuel pumps
☐ Clean toilets ☐ Nearby accommodation ☐ Maintenance/repair workshops
☐ Available aircraft to use ☐ Secure overnight car parking ☐ Secure overnight aircraft parking
☐ Hard runways, taxiways etc ☐ At least ground-to-air communications ☐ Simple joining procedure
☐ Emergency services ☐ Multiple runways for all wind directions ☐ Extended operating hours
☐ Friendly & helpful staff ☐ Training school(s) ☐ Good grass landing area
☐ Available hangars ☐ Active social club ☐ Other (specify)……
Now make a cross ☒ to highlight the feature that would most improve it.

C7. If your base aerodrome had all the features in the above question, what difference would it make to the number of hours you fly? (Indicate the extra hours you might do compared to now)
☐ Would not change ☐ up to 10% extra ☐ up to 25% extra ☐ up to 50% extra ☐ >50% (specify)……

C8. Why do you think your base aerodrome not have these features?
☐ Not enough demand ☐ Too expensive ☐ Staff shortages ☐ Local Authority would refuse
☐ Poor management ☐ Locals would object ☐ Don't know ☐ Other (specify)……
Now make a cross ☒ to highlight the most significant reason.

C9. Imagine your base aerodrome no longer existed, what options might be open to you?
☐ Stop flying altogether ☐ Use a nearby aerodrome with at least similar features
☐ Only fly when abroad ☐ Use a nearby aerodrome with fewer features
☐ Move & live nearer to another aerodrome ☐ Travel to a more distant aerodrome
☐ Change flying habits / category of aircraft ☐ Other (specify)……
Now make a cross ☒ to highlight the most likely option.

C10. If you selected any option other than 'stop flying altogether' indicate the likely impact on your flying:
☐ Would not change ☐ up to 10% decrease ☐ up to 25% decrease ☐ up to 50% decrease ☐ >50% (specify)……

C11. Have you ever been significantly involved in defending the activities of an aerodrome? Yes ☐ No ☐

Many thanks for finding the time to help with this survey. See overleaf for details of the prize draw.

2) Aerodrome Operators' Questionnaire (postal)

AERODROME SURVEY

- *The questions are intended to be answered by the aerodrome manager, owner or equivalent.*
- *As the most of the form will be read electronically, please use a black ballpoint pen and cover mistakes with correction fluid.*
- *Write clearly using capitals as necessary, keep within the small boxes and answer multiple choice questions using a cross ☒.*
- *All financial data will be used on a strictly confidential basis for research purposes only. See back page for details of the research.*
- *The term 'aerodrome' (abbreviated to AD) is used to describe any type of formal flying site, including grass strips and heliports.*

1) Aerodrome name: _____

& postcode: _____ i.e. GU22 1XT

2) Who owns the AD? (one cross ☒ only)

☐ An individual or family ☐ A registered company ☐ A local council
☐ A trust ☐ The MOD ☐ Other (specify) .....

3) Who actually manages the AD? (one cross ☒ only)

☐ The owner ☐ Aviation related business ☐ A flying club
☐ An AD operations company ☐ The MOD ☐ Other (specify) .....

4) How many General Aviation aircraft are normally based at the AD? i.e. 23

☐☐ Helicopters ☐☐ Multi engined piston a/c ☐☐ Airship / balloons
☐☐ Jets ☐☐ Gliders (inc. self launching) ☐☐ All others (specify main category)
☐☐ Single engined piston a/c ☐☐ Microlights / gyrocopters .....

5) Do you operate within a maximum number of movements per year?

(Select one option ☒ and indicate no. of movements i.e. 360)

☐ Restricted by planning conditions ..... to a maximum of ('000s) ☐☐☐
☐ Self imposed ..... to a maximum of ('000s) ☐☐☐
☐ There is no formal limit .... but it averages about ('000s) ☐☐☐

And, what percentage of actual movements would you say are GA related? (one cross ☒ only)

☐ Nil ☐ < 10% ☐ < 40% ☐ < 80%
☐ < 5% ☐ < 20% ☐ < 60% ☐ > 80%

6) What level of local business rates do you pay annually for the AD? (one cross ☒ only)

☐ Not applicable ☐ < £ 5,000 ☐ < £ 50,000 ☐ < £ 200,000
☐ < £ 1,000 ☐ < £ 10,000 ☐ < £ 100,000 ☐ < £ 250,000
☐ < £ 2,000 ☐ < £ 20,000 ☐ < £ 150,000 ☐ > £250k (specify in £'000s) ... ☐☐☐☐

7) Do you rent out AD buildings/land to other businesses? ☐ Yes ☐ No

If Yes, how many other businesses are located at the AD?

a) That are purely aviation related. ..... ☐☐
b) That are not aviation related but need the facilities of an AD. ..... ☐☐
c) That are not aviation related and don't need the facilities of an AD. ... ☐☐

8) The AD is operated as: ☐ A financial concern ☐ A private facility ☐ An MOD facility ☐ Other (specify) .....

If a financial concern, what level of gross turnover do you typically achieve? (include any third party business rents)

☐ < £ 10,000 ☐ < £ 100,000 ☐ < £ 1.0 Mill ☐ < £ 10.0 Mill
☐ < £ 20,000 ☐ < £ 200,000 ☐ < £ 2.0 Mill ☐ < £ 20.0 Mill
☐ < £ 50,000 ☐ < £ 500,000 ☐ < £ 5.0 Mill ☐ > £ 20.0 Mill (specify in £ Mill) ... ☐☐

9) For the past ten years, indicate the history of planning applications that were intended to improve aviation facilities at your AD.

No. of Applications ☐☐ → No. of Refusals ☐☐ → No. of Appeals ☐☐ → No. of Appeals Allowed ☐☐ → No. Appeals via Public Inquiry ☐☐

10) How significant are local planning approvals/conditions to the successful operation of your AD? (One cross ☒ only)

☐ Not significant ☐ Moderately significant ☐ Significant ☐ Very significant ☐ Don't know

11) Apart from responding to specific applications/appeals, have you ever written to your local planning authority about its general plans for GA in your area? (One cross ☒ only)

☐ Many times ☐ Several times ☐ Once or twice ☐ Never written ☐ Don't know

12) How do you regard your county's current structure plan with respect to GA? (One cross ☒ only)

☐ Biased against GA ☐ Shows little interest in GA ☐ Takes a balanced view ☐ Positive towards GA ☐ Don't know

13) Central government says local authorities should consider *"the role of small airports and airfields in serving local business, recreational and emergency service needs"*. Which statement best describes how your local planning authority considers GA?

☐ Thinks GA's role is positive ☐ Sees some role for GA ☐ Sees little role for GA ☐ Thinks GA has no role ☐ Don't know

14) Government also expects local authorities to *"take account of the economic, environmental and social impacts of GA "*. Which statement best describes your local authority's attitude about the economic/social benefits versus the environmental effects of GA?

☐ On environmental side ☐ Claims to consider both ☐ Does consider both ☐ On economic/social side ☐ Don't know

15) Local authorities should also *"identify and where appropriate protect sites"*. To what extent do you think your local authority takes positive measures to protect flying sites?

☐ No proactive protection ☐ If asked, might protect ☐ If asked, will protect ☐ Actively seeks to protect ☐ Don't know

16) How many staff do you (or your organisation) typically employ at the AD? (count part time as ½ full time)

☐ < 5 ☐ < 30 ☐ < 60 ☐ < 150
☐ < 10 ☐ < 40 ☐ < 80 ☐ < 200
☐ < 20 ☐ < 50 ☐ < 100 ☐ > 200 (specify) .....

17) If there are third party businesses on-site, how many do you estimate they employ at the AD?

☐ < 5 ☐ < 30 ☐ < 60 ☐ < 150
☐ < 10 ☐ < 40 ☐ < 80 ☐ < 200
☐ < 20 ☐ < 50 ☐ < 100 ☐ > 200 (specify) .....

18) Of the total employees on-site, what percentage would you estimate live within the local community (area affected by AD)?

☐ Nil ☐ < 10% ☐ < 40% ☐ < 80%
☐ < 5% ☐ < 20% ☐ < 60% ☐ > 80%

19) How much do you (or your organisation) annually purchase from suppliers within the local community?

☐ Not applicable ☐ < £ 5,000 ☐ < £ 50,000 ☐ < £ 200,000
☐ < £ 1,000 ☐ < £ 10,000 ☐ < £ 100,000 ☐ < £ 250,000
☐ < £ 2,000 ☐ < £ 20,000 ☐ < £ 150,000 ☐ > £250k (specify in £'000s) ...

20) As a measure of AD activity and use of local roads, how many formal car parking spaces do you have?

☐ < 5 ☐ < 30 ☐ < 60 ☐ < 150
☐ < 10 ☐ < 40 ☐ < 80 ☐ < 200
☐ < 20 ☐ < 50 ☐ < 100 ☐ > 200 (specify) .....

21) Is the local community involved in any of the following AD based activities? (Mark a cross ☒ against each option that applies)

☐ Consultative meetings ☐ Car boot sales ☐ ATC training
☐ On-site social events ☐ Air shows / displays ☐ Local apprenticeships
☐ Local school visits ☐ Visitor centre / Museum ☐ Other (specify) .....

22) Considering the past, present & future:

	As of today,	.... were say 10 years ago	... and likely to be in 10 years.
a) How many GA flying schools are located at your AD,	☐	☐	☐
b) How many ADs with similar GA facilities to yours are there roughly within a 25 mile radius?	☐☐	☐☐	☐☐

Thank you for helping with this research. If you have any comments, please use the following page or attach a note.

One last request. The next stage will be to select a number of ADs for on-site case studies (see overleaf). If you are prepared to help by providing access to your AD, please give your contact details below.

Name: ..... Tel. no. .....

3) Local Authority Questionnaire (follow up hard copy version)

For use as an alternative to www.qiq.co.uk/survey/

Sponsored by: Department for Transport

Local Authority / General Aviation Survey

Unique Survey Identifier : ..... Title (Dr, Mr, Mrs, Ms etc): .....

Local Authority Name ; ..... Respondent's Name: .....

Post Held: .....

This questionnaire is intended to examine the relationship between local authority planners and the General Aviation (GA) industry, particularly with respect to formal flying sites (airfields of all kinds, airports, aerodromes, grass strips, helipads etc). In case you are not clear about the term General Aviation, it covers all flying that is neither military nor by scheduled airliner, charter or taxi aircraft. Its vehicles include high performance jet-engined "executive" aircraft, balloons, microlights, light aircraft and helicopters.

Section 1 – Flying Sites located in the District.

Please list the active flying sites in your local district, and complete the table as indicated.

Site No.	Flying Site Name	Approximate Location (e.g. 3 miles south of Anytown)	Broad Description of Location: Within Urban Area	On Urban Fringe	Rural
1			○	○	○
2			○	○	○
3			○	○	○
4			○	○	○

1a) How many of these sites were not used for flying 10 years ago? ☐

1b) How many other sites, would you estimate, have ceased being used for flying in the past 10 years? ☐

Section 2 – Broad Classification of Airfields / Flying sites.

Indicate one category that best describes each flying site.

Site No.	Flying Site Name	National Airport	Regional Airport	Military Airfield	Local Aerodrome	Heliport / pad	Grass Strip / launch site	28 Day Rule Site	Other
1		○	○	○	○	○	○	○	○
2		○	○	○	○	○	○	○	○
3		○	○	○	○	○	○	○	○
4		○	○	○	○	○	○	○	○

Section 3 – Use of Conditions for Regulating Flying.

Indicate if and how Flying is regulated using Conditions (or legal agreement).

Site No.	Flying Site Name	Regulations are not applied	Temporary permission/s	Number of movements	Days Used	Times of day	Aircraft type/ weight/ engine	Types of Activity	Take-off/ Landing directions	Other form of regulation
1		☐	☐	☐	☐	☐	☐	☐	☐	☐
2		☐	☐	☐	☐	☐	☐	☐	☐	☐
3		☐	☐	☐	☐	☐	☐	☐	☐	☐
4		☐	☐	☐	☐	☐	☐	☐	☐	☐

3a) How significant, do you think, is the impact of planning regulation upon the operation of an average airfield?

○ Not Significant ○ Moderately Significant ○ Significant ○ Very significant ○ Don't know

Section 4 – Permanent Activities / Land Uses on the District's Flying Sites

Indicate if and what permanent non-flying uses are at these sites (for temporary uses see next table)

Site No.	Flying Site Name	There are no Non-flying uses	Museum / Heritage	Business / Office Develop-ment	Retail (Outlets) Park	Ware-housing Manu-facturing	Sports / Leisure / Youth Facilities	Government (Prison, Armed Services)	Agriculture	Housing	Race Course (Motor / Horse etc)	Other
1		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Section 5 – Temporary / Periodic Land Uses on the District's Flying Sites.

Indicate if and what temporary / periodic non-flying land uses are found at these sites

Site No.	Flying Site Name	There are no temporary uses	Motor Sports	Market Trading	Air Displays / Shows	Other Shows / festivals	Car boot sales	Other
1		☐	☐	☐	☐	☐	☐	☐
2		☐	☐	☐	☐	☐	☐	☐
3		☐	☐	☐	☐	☐	☐	☐
4		☐	☐	☐	☐	☐	☐	☐

Section 6 – References to Aviation in the Adopted Local Plan.

Answer questions a to d, then if there are specific references, please complete the table for each site.

	Yes	No
a) Does the adopted local plan comment upon aviation in general terms?	○	○
b) If No, is there an intention to add general comments in the future?	○	○
c) Does the adopted local plan comment upon specific airfields?	○	○
d) If No, is there an intention to add specific references in the future?	○	○

Site No.	Flying Site Name	Indicate which sites are referred to in the plan	What will be the impact on Flying?				
			To close site	To create new site	Restrict activity	No impact	Expand activity
1		☐	☐	☐	☐	☐	☐
2		☐	☐	☐	☐	☐	☐
3		☐	☐	☐	☐	☐	☐
4		☐	☐	☐	☐	☐	☐

6a) Apart from specific applications/appeals, how often have airfield owners or operators in your district written to comment upon the local authority's plans for general aviation?

○ About Once Every Year ○ About Once Every Five Years ○ About Once Every Ten Years ○ They Never Write ○ Don't know

6b) How do you regard your county's current structure plan with respect to General Aviation (GA)?

○ Not Applicable (Unitary Authority) ○ Unsupportive Of GA ○ Takes a Balanced View Of GA ○ Very Supportive Of GA ○ Don't know

6c) How do you regard the regional planning guidance with respect to General Aviation (GA)?

○ Not Applicable (Unitary Authority) ○ Unsupportive Of GA ○ Takes a Balanced View Of GA ○ Very Supportive Of GA ○ Don't know

Section 7 – Flying Site Safeguarding Status.

Answer questions a & b then complete the table.

	Yes	No
a) Is there a reference to the safeguarding of airfields in the adopted Local Plan?	○	○
b) If No, is there an intention to add a reference in the future?	○	○
c) Have any old (disused) airfields been safeguarded in your district?	○	○

Site No.	Flying Site Name	Site operator has requested safeguarding Yes | No	Has (or will) the site be protected? Yes | No	If Yes, to protect it from ...						
				Nearby Tall Structures	New / Changed Roads	Encroachment by Housing	Conflicting Flying Sites	Risk of Bird Strikes	Impact on Radar etc.	Other Developments
1		○ ○	○ ○	☐	☐	☐	☐	☐	☐	☐
2		○ ○	○ ○	☐	☐	☐	☐	☐	☐	☐
3		○ ○	○ ○	☐	☐	☐	☐	☐	☐	☐
4		○ ○	○ ○	☐	☐	☐	☐	☐	☐	☐

7a) GPDO circular 01/2003 refers to "Safeguarding" flying sites, to what extent do you think your local authority takes positive measures to protect flying sites?

○ Never Been Asked to Protect Sites ○ Have Not Accepted Any Requests to Date ○ Have Safeguarded Sites When Requested ○ Have Safeguarded & Actively Promot Owners to Apply. ○ Don't know

Section 8 – Suitability of alternative land uses on active sites.

Rate the suitability of the following land uses when mixed on active flying sites. (bear in mind the activity may take up only a small portion of the site).

Possible land uses	< wholly suitable					wholly unsuitable >
	1	2	3	4	5	6
1.Museum / Heritage	C	C	C	C	C	C
2.Business / Office Development	C	C	C	C	C	C
3.Retail (Outlets) Park	C	C	C	C	C	C
4.Storage, Distribution, Manufacturing	C	C	C	C	C	C
5.Sports / Leisure / Youth Centre	C	C	C	C	C	C
6.Governmental (Prison, Services etc.)	C	C	C	C	C	C
7.Agricultural	C	C	C	C	C	C
8.Housing	C	C	C	C	C	C
9.Race Course (Motor / Horse etc)	C	C	C	C	C	C
10.Temporary Motor Sports	C	C	C	C	C	C
11.Market Trading	C	C	C	C	C	C
12.Air Displays / Shows	C	C	C	C	C	C
13.Other Shows / festivals	C	C	C	C	C	C
14.Car boot sales	C	C	C	C	C	C

8a) In PPG13, central government asks local authorities to consider "*the role of small airports and airfields in serving local business, recreational and emergency service needs*". How much impact do you consider General Aviation has on business & recreation?

C A Significant Positive Impact C Some Positive Impact C Little Or No Positive Impact C Can Have a Negative Impact C Don't know

Section 9 – Perceived impacts & benefits of land for leisure use.

Considered as separate uses (not mixed) rate the following leisure based uses of land & space.

	Environmental considerations < Non intrusive					Very intrusive >	Economic & social considerations < No benefit					High benefit >
	1	2	3	4	5	6	1	2	3	4	5	6
1.Small grass flying strip / site for light aircraft	C	C	C	C	C	C	C	C	C	C	C	C
2.Small grass flying strip / site for gliders	C	C	C	C	C	C	C	C	C	C	C	C
3.Golf course (18 hole, with clubhouse etc)	C	C	C	C	C	C	C	C	C	C	C	C
4.Golf range with clubhouse	C	C	C	C	C	C	C	C	C	C	C	C
5.Open air Go-Karting circuit	C	C	C	C	C	C	C	C	C	C	C	C
6.School farm & visitor centre	C	C	C	C	C	C	C	C	C	C	C	C
7.Motor racing / Stock car circuit	C	C	C	C	C	C	C	C	C	C	C	C
8.Water sports park, including water skiing	C	C	C	C	C	C	C	C	C	C	C	C
9.In-land yatch marina with clubhouse etc.	C	C	C	C	C	C	C	C	C	C	C	C
10.Outdoor small bore & rifle ranges	C	C	C	C	C	C	C	C	C	C	C	C
11.Equestrian centre & showground	C	C	C	C	C	C	C	C	C	C	C	C

Section 10 – Comparative impacts & benefits of land for transport use.

Considered as separate uses (not mixed) rate the following transport based uses of land & space.

	Environmental considerations < Non intrusive					Very intrusive >	Economic & social considerations < No benefit					High benefit >
	1	2	3	4	5	6	1	2	3	4	5	6
1.Local aerodrome	C	C	C	C	C	C	C	C	C	C	C	C
2.Regional Airport	C	C	C	C	C	C	C	C	C	C	C	C
3.Urban Heliport	C	C	C	C	C	C	C	C	C	C	C	C
4.Container Sea Port	C	C	C	C	C	C	C	C	C	C	C	C
5.Intercity Railway line	C	C	C	C	C	C	C	C	C	C	C	C
6.Commuter Rail Station & parking	C	C	C	C	C	C	C	C	C	C	C	C
7.Road Freight Terminal	C	C	C	C	C	C	C	C	C	C	C	C
8.Motorway	C	C	C	C	C	C	C	C	C	C	C	C
9.Motorway Service Area	C	C	C	C	C	C	C	C	C	C	C	C
10.Canal / Navigable River	C	C	C	C	C	C	C	C	C	C	C	C
11.Flight Path above 2000 feet	C	C	C	C	C	C	C	C	C	C	C	C

10a) In PPG13 central government asks local authorities to *"take account of the economic, environmental and social impacts of GA"*. Which statement best describes your local authority's attitude about the economic/social benefits versus the environmental effects of General Aviation?

○ Has a Focus On Environment Issues ○ Considers Both But Favours Environment Issues ○ Considers Both But Favours Economic/Social Issues ○ Has a Focus On The Economic/ Social Aspects ○ Don't know

Section 11 – Impacts - real and perceived

Please indicate the extent to which you agree or disagree with these statements

	< Strongly Agree 1	2	3	4	5	Strongly Disagree > 6
1.A local aerodrome can bring important high value business visitors to local towns.	○	○	○	○	○	○
2.There are more than enough airfields left over from WWII without the need to create new ones.	○	○	○	○	○	○
3.Airfields are best located on the outskirts of urban development & connected to local transit lines.	○	○	○	○	○	○
4.Redundant land on airfield sites can play an important role in local development strategies.	○	○	○	○	○	○
5.Planning applications related to airfields are more likely to reach the appeal stage than other types.	○	○	○	○	○	○
6.Noise considerations will generally outweigh any economic and social benefits resulting from flying.	○	○	○	○	○	○
7.New uses for airfields (including housing development) may generate unacceptable traffic problems.	○	○	○	○	○	○
8.The local airfield really only benefits a few wealthy enthusiasts from outside the district.	○	○	○	○	○	○
9.Local people that were born here don't complain about flying as much as those move into the area.	○	○	○	○	○	○
10.Compared to ten years ago there is now less flying activity in this district	○	○	○	○	○	○
11.There is too much pressure from local Nimbys to allow more flying activity.	○	○	○	○	○	○
12.General aviation plays a vital economic and social role in the local area.	○	○	○	○	○	○
13.In ten years time, there may be fewer airfields in the region supporting general aviation.	○	○	○	○	○	○
14.In ten years time, there may be about the same number of airfields for general aviation.	○	○	○	○	○	○
15.Compared to many other alternative uses for an old WWII site, an active airfield is a lesser evil.	○	○	○	○	○	○
16.An airfield can act as a "growth pole" for other businesses.	○	○	○	○	○	○
17.Active and disused flying sites should be protected & safeguarded from new forms of development	○	○	○	○	○	○

Section 11 – Thank you for taking the time to complete this questionnaire. Now that you have, how qualified do you feel you are to comment upon general aviation flying sites relative to the task of local planning?

○ Not Qualified ○ Moderately Qualified ○ Reasonably Qualified ○ Very Qualified ○ Don't know

Regardless of how qualified you feel, would you be prepared to be interviewed about this questionnaire and the issues it raises?

○ Yes ○ No

If Yes, please give contact details

Phone Number:

E-mail address:

Please comment here on any issues raised by this questionnaire.

In the event of query, please e-mail uctltlo@ucl.ac.uk and title your correspondence LA Survey.

When completed, send to:
GASAR PROJECT
c/o Terry Lober
Bartlett School of Planning
University College London
Wates House
22 Gordon Street
LONDON WC1H 0QB

4

4) Manufacturers and Traders Questionnaire (postal)

BBGA/GASAR Survey

- *The questions are intended to be answered by the CEO, owner or equivalent.*
- *Write clearly using capitals as necessary, keep within the small boxes and answer multiple choice questions using a cross* [X].
- *All financial data will be used on a strictly confidential basis for research purposes only. See back page for details of the research.*
- *The term 'aerodrome' (abbreviated to AD) is used to describe any type of formal flying site, including grass strips and heliports.*
- *The terms General Aviation or GA are taken to include Business Aviation.*

1) Business name: [ ]

& postcode: [ ] i.e. [G U 2 2 1 X T]

2) Which industry classification(s) best describes your business? (for a breakdown of the following, see the back page)

[ ] Manufacturers & Aircraft sales
[ ] Business & Commercial Aviation
[ ] General/Other
[ ] Commercial Aerial Work
[ ] Flying Training
[ ] Engineering
[ ] Airfield & Fixed Base Operations

If you have indicated more than one classification, how are they split in percentage terms based on turnover? i.e. [3 5]
(please double check your entries add up to 100 %)

[ ] Manufacturers & Aircraft sales
[ ] Business & Commercial Aviation
[ ] General/Other
[ ] Commercial Aerial Work
[ ] Flying Training
[ ] Engineering
[ ] Airfield & Fixed Base Operations

3) Does your business involve the ownership/leasing & operation of one or more **General Aviation** aircraft? Yes [ ] No [ ]

If yes, how many General Aviation aircraft do you normally operate? i.e. [2 3]

[ ] Helicopters
[ ] Jets
[ ] Multi engined turbine a/c
[ ] Multi engined piston a/c
[ ] Single engined piston a/c
[ ] Microlights / gyrocopters
[ ] Airship / balloons
[ ] All others (specify main category) .....

And how many of these are not "G" registered?

[ ] Helicopters
[ ] Jets
[ ] Multi engined turbine a/c
[ ] Multi engined piston a/c
[ ] Single engined piston a/c
[ ] Microlights / gyrocopters
[ ] Airship / balloons
[ ] All others

4) What level of gross turnover does your business typically achieve?

[ ] < £ 10,000
[ ] < £ 20,000
[ ] < £ 50,000
[ ] < £ 100,000
[ ] < £ 200,000
[ ] < £ 500,000
[ ] < £ 1.0 Mill
[ ] < £ 2.0 Mill
[ ] < £ 5.0 Mill
[ ] < £ 10.0 Mill
[ ] < £ 20.0 Mill
[ ] > £ 20.0 Mill (specify in £ Mill) [ ]

And is this turnover entirely from General Aviation? [ ] Yes [ ] No ..... If Yes, go to Question 5

If no, what percentage of turnover would you estimate is GA related?

[ ] <1%
[ ] < 5%
[ ] < 10%
[ ] < 20%
[ ] < 40%
[ ] < 60%
[ ] < 80%
[ ] > 80%

And could the rest of your business exist without the GA business? [ ] Yes [ ] No

If yes, when answering the following questions, please consider only the elements due to General Aviation.

5) Does your business involve exporting General Aviation products or services from the UK? ☐ Yes ☐ No

If yes, what percentage of your turnover, would you say, is due to sales from such exports?

☐ <1% ☐ < 5% ☐ < 10% ☐ < 20% ☐ < 40% ☐ < 60% ☐ < 80% ☐ > 80%

6) Does your business involve importing General Aviation products or services to the UK? ☐ Yes ☐ No

If yes, what percentage of turnover, would you say, is needed to recover the cost of such imports?

☐ <1% ☐ < 5% ☐ < 10% ☐ < 20% ☐ < 40% ☐ < 60% ☐ < 80% ☐ > 80%

7) How many General Aviation staff does your company typically employ? (count part time as ½ full time)

☐ < 5 ☐ < 10 ☐ < 20 ☐ < 30 ☐ < 40 ☐ < 50 ☐ < 60 ☐ < 80 ☐ < 100 ☐ < 150 ☐ < 200 ☐ > 200 (specify) ..... ☐☐☐

8) Are any of your staff permanently located at one or more specific aerodromes? Yes ☐ No ☐

If yes, how many staff are aerodrome based? (count part time as ½ full time)

☐ < 5 ☐ < 10 ☐ < 20 ☐ < 30 ☐ < 40 ☐ < 50 ☐ < 60 ☐ < 80 ☐ < 100 ☐ < 150 ☐ < 200 ☐ > 200 (specify) ..... ☐☐☐

And, indicate the number and type of sites involved. i.e. 1 2

☐☐ Major Hub Airports (*see below) ☐☐ Other Hub / Regional Airports ☐☐ Heliport

☐☐ Local Aerodrome ☐☐ Private Aerodrome ☐☐ Flying Club Aerodrome

☐☐ Farm/Private strip ☐☐ Helipad ☐☐ Other (specify) .....

* Major Hub Airports: Heathrow, Gatwick, Edinburgh, Glasgow, Luton, Manchester, Birmingham, E Midlands, Southampton, Bristol

9). If you operate a fleet of aircraft would you be prepared to discuss, on an absolutely confidential basis, the operational costs involved and other financial aspects of your business? If so, please give your name & contact number below.

Name: ..... Tel. no. .....

Thank you for helping with this research. Please add any comments below or attach a note.

.....

.....

.....

.....

.....

5) Case study proforma (emailed prior to interviews)

General Aviation Small Aerodrome Research (GASAR): Briefing Document

Background to the Study
This study is part of a larger project investigating the linkages between Britain's land use planning system and the economic viability of General Aviation (GA) aerodromes. In the past, public inquiries inspectors have noted, that although ample information exists regarding the environmental impacts of small aerodromes, the economic case has not been well understood. The research being overseen by The Bartlett School of Planning at UCL and is jointly funded by the Department for Transport and the General Aviation Awareness Council.

Methodology
The case study phase has been preceded by four national surveys covering pilot/aircraft owners, aerodrome operators, manufacturers/traders and local authorities.

A target of five local authorities and fifteen aerodromes will be visited during the case study phase. The intention is to select the aerodromes and authorities on the basis of their mutual connectivity and inter-dependence. This will be achieved by examining the records of individual flights between each site, radiating out from the first aerodrome (and its authority) visited. Subsequent authorities and aerodromes will be selected to achieve a dispersed geographical spread. They will be selected from those that have both responded to the national surveys and are felt might illustrate different aspects of the issues involved (the aim is not to achieve statistical representation but to gain insights into particular situations that could support wider generalisations).

Financial data will be treated as confidential but where ever possible it is hoped that conversations and other data gathered may be used later to illustrate specific points. Each interviewee will be sent a copy of the intended questions prior to the meeting. After the interview, each interviewee will be sent a formal record of the meeting and asked to review its contents. The content of these reports may be used in the final study report.

Purpose of the Field Visits:

- Collect data regarding factors that affect the economic performance of aerodromes, including the connectivity of the subject site to other aerodromes.
- Collect documents describing local authority plans and regulations affecting the subject aerodrome(s).
- Gather experiences and views about the relationships between site operators, the local planning function and other local stakeholders.

Interview Questions for Local Authority Planners:

1. PPGs are to be rewritten. PPG13 currently requires planners to take account of "the economic, environmental and social impacts of GA" and to consider "the role of small airfields in serving local business, recreational and emergency needs". Do you find any of these aspects of GA more difficult to assess than other businesses?

2. If considering a GA site how would you assess the economic benefits that might be felt beyond your district compared to the impacts of noise and aerial intrusion on local residents?

3. The county planning structure is to be replaced by strengthened regional planning. As aerodromes connect with other sites beyond county boundaries, do think regional planning will assist a broader spatial view of GA or will the regions be too remote and strategic to understand the needs of the small businesses involved?

4. What has been your experience of local pressure groups, either for or against flying activity? Will the introduction of Statements of Community Involvement assist the consultation process?

5. Has your authority had any past issues, in say the last ten years, with the GA site(s) within its boundaries and if so, what were they? Equally are there any ongoing issues and what are they?

6. Do your draft and/or adopted plans make any references to GA sites? If so please provide the documentation.

7. Have the site(s) within your jurisdiction applied for changes to either regulations controlling flying or permissions for development in recent years? If so please give details. Would you say the site operators are more or less likely to apply for changes than other types of small business? If so, why might this be?

8. Has your authority consulted organisations like the CAA for advice on your GA sites? Do you think there might be a need for impartial advice about the technical aspects of regulating flying?

Possible Data from Local Authorities:

Draft and adopted plans – references to GA and specific sites, including safeguarding provisions.
Site Specific Conditions of Use
Site Specific Planning Applications and permissions

Interview Questions for Aerodrome Operators:

1. Do you have regular contact with planners? Do you write in to comment upon local / county plans?

2. What conditions of use, affecting flying activity, apply to your aerodrome and when were they first introduced? What has been the history regarding planning permission? How has this shaped the way the site developed?

3. How do you manage any complaints and relationships with the local community?

4. In your dealings with the local authority to what extent have they understood GA and your operations? Have you needed to use an economic argument to justify any changes in regulations or controls and if so how successful was this?

5. When faced with issues have you sought support from organisations that in theory should be able to help (this might include the CAA, GAAC, GAMTA/BGGA or other local aerodromes)?

6. Has the site been 'safeguarded' by the local authority and if so, against what, and was it at your request?

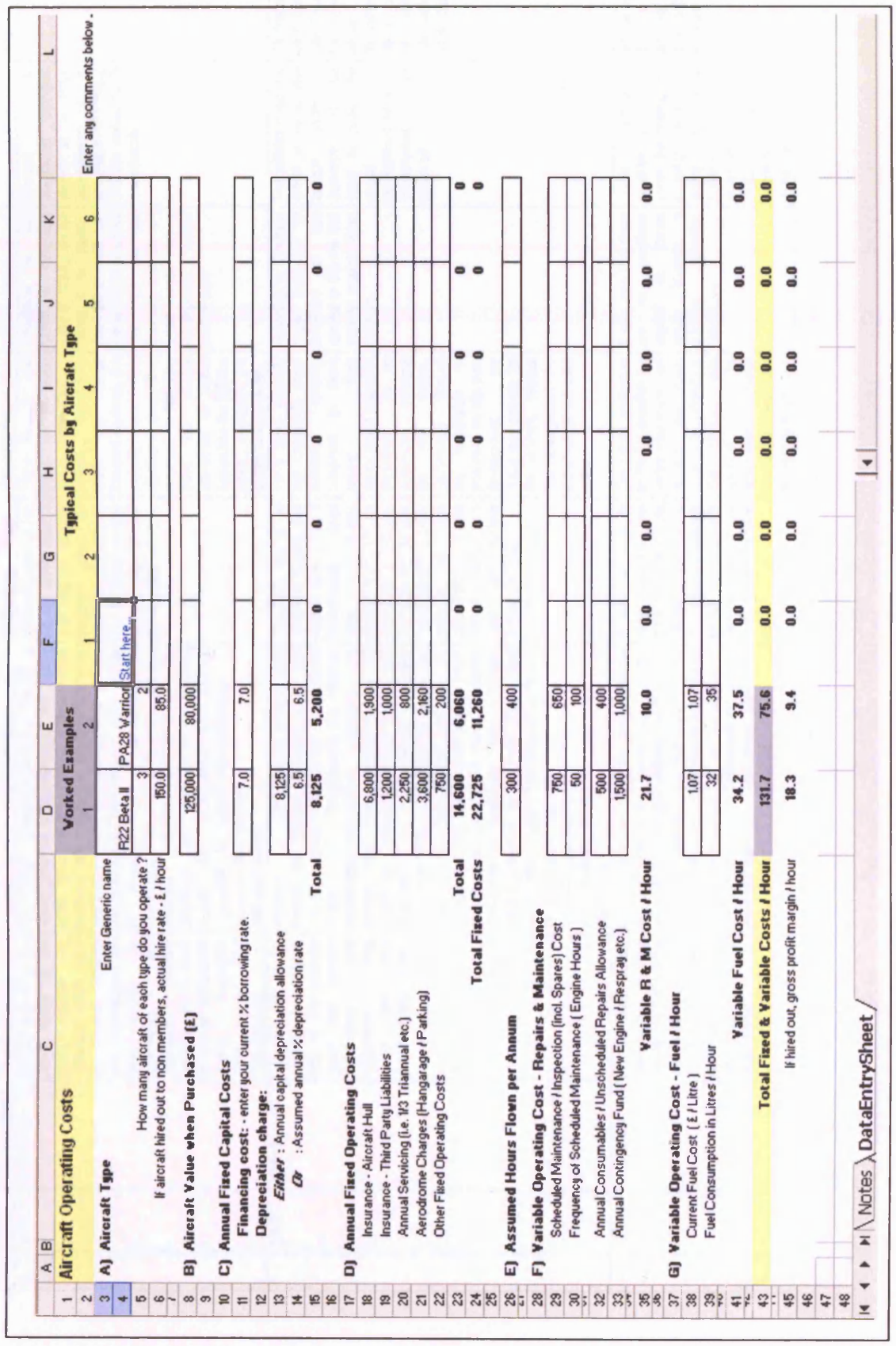
7. How would you describe the future for GA in the UK and your aerodrome in particular? Is your site under pressure from non-aviation developers and if so, what do you think will eventually happen? What do you regard as the biggest threat to GA in the future?

8. Last year a new Planning Act became law. It promises to overcome the failings of the past. Do you think a strengthened regional plan will make any difference to your operations, or the intentions to better express planning guidance and to ensure greater and broader participation in planning issues?

Possible Data from Aerodromes:

Confirmation of Survey Data
Sample (period TBA) of flight takeoff/landing log – aircraft type, POB, time, destination/departure
Annual movements, estimate circuit training movements, split support /business / leisure.
Resident aircraft by type, hangar / open parking
Aerodrome P&L, contribution from flying and non-flying activities
Total turnover all businesses / employees involved / local expenditure
Noise abatement procedures / Db footprint if available / Consultative procedures & structure

6) Aircraft cost data collection spreadsheet (distributed during case studies)



Aircraft Operating Costs		Worked Examples			Typical Costs by Aircraft Type						
		1	2		1	2	3	4	5	6	Enter any comments below -
A) Aircraft Type	Enter Generic name	R22 Beta II	PA28 Warrior	Start here...							
How many aircraft of each type do you operate ?		3	2								
If aircraft hired out to non members, actual hire rate - £ / hour		150.0	85.0								
B) Aircraft Value when Purchased (£)		125,000	80,000								
C) Annual Fixed Capital Costs											
Financing cost: - enter your current % borrowing rate.		7.0	7.0								
Depreciation charge:											
Either : Annual capital depreciation allowance		8,125									
Or : Assumed annual % depreciation rate		6.5	6.5								
	Total	8,125	5,200	0	0	0	0	0	0	0	0
D) Annual Fixed Operating Costs											
Insurance - Aircraft Hull		6,800	1,900								
Insurance - Third Party Liabilities		1,200	1,000								
Annual Servicing (i.e. 1/3 Triannual etc.)		2,250	800								
Aerodrome Charges (Hangarage / Parking)		3,600	2,160								
Other Fixed Operating Costs		750	200								
	Total	14,600	6,060	0	0	0	0	0	0	0	0
	Total Fixed Costs	22,725	11,260	0	0	0	0	0	0	0	0
E) Assumed Hours Flown per Annum		300	400								
F) Variable Operating Cost - Repairs & Maintenance											
Scheduled Maintenance / Inspection (incl. Spares) Cost		750	650								
Frequency of Scheduled Maintenance (Engine Hours)		50	100								
Annual Consumables / Unscheduled Repairs Allowance		500	400								
Annual Contingency Fund (New Engine / Respray etc.)		1,500	1,000								
	Variable R & M Cost / Hour	21.7	18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G) Variable Operating Cost - Fuel / Hour											
Current Fuel Cost (£ / Litre)		1.07	1.07								
Fuel Consumption in Litres / Hour		32	35								
	Variable Fuel Cost / Hour	34.2	37.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Fixed & Variable Costs / Hour	131.7	75.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
If hired out, gross profit margin / hour		18.3	9.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX E: Case study summaries

(based on full interview notes, as agreed with interviewees)

	Date	Local Authorities	History / Background	Guidelines	Socioeconomic Benefits	Regional Planning	External Pressures	Conditions	Development	Other
1	11.5.05	CHERWELL	Oxford Airport at the lower corner of the area covered by Cherwell. Other sites, at Weston, Bicester and Shennington are not beset by complaints and generally speaking there is not a huge weight of anti-aviation feeling - complaints relate to very local circumstances.	GA sites present similar problems to ex-MOD sites, bringing conflict with other policy objectives. a GA framework would help to overcome the possibility that the new Regional Planning framework will not include the detail necessary to assist planners when dealing with small airfields.	Whether or not GA is different, the same range of issues exists in principle with other developments but airfields tend to be more complicated. The safeguarding map was used to illustrate the wide area of influence airfields have over the rural surroundings.	Asked if a national plan for GA would help, it was felt the regional transport plan for example was likely to be too broad to ever include the "smaller" GA sites like Oxford.	There is only one group, Oxford Noise Action Group (ONAG). Airfield complaints, which are usually focussed on noise, are probably no more significant than other activities. In the plans there are several references to Oxford Airport and the position taken regarding the control of noise levels.	Conditions of use aimed at controlling noise or activity are not known to be applied. The airports did not cause any more issues than the average business and do not cause issues from a development control point of view.	Cherwell has designated Kidlington airport as a major development site, in accordance with PPG2 and this makes things more flexible,	
2	2.6.05	TEWKESBURY	Staverton lies in the middle of the narrowest part of the statutory green belt between Cheltenham and Gloucester. It was unlike any other function in the borough.	Staverton does present real tensions due to its green belt status. Tthe sustainability transport agenda has given cause for repeated proposals by Gloucester City for large scale development and the closure of the airport. There was an inbuilt conflict presented by aerodromes, needing to be located away from urban populations yet service urban populations.	Council certainly sees Staverton as a plus offering business aspects that influence the economic and attractiveness of the borough. It was sometimes extremely difficult to detach the airport and its GA function from its green belt status. Gloucester city see a major financial benefit from developing the site.	The RSS, due to be published in draft, may contain options that if implemented, could have adverse consequences on the operations of the site. The hope was the new Act would give a better overview and less parochialism. It was agreed there may be a need for national framework on GA.	There were relatively few complaints about aviation, certainly compared to those arising from development proposals elsewhere. As no agreement between the two owners, Tewkesbury Council are responsible for protecting the site from development, the status quo prevails for the moment. Without this arrangement the airport would not exist today.	According to Staverton airport there are no conditions of use applied to the site that seek to regulate flying activities.	The policies reflect the extent of the positive support given to Staverton and the intent to protect the airport from development felt to be inappropriate in the green belt.	Cheltenham Borough Council and Gloucester City Council jointly own the airport, the former wishes to see Staverton remain an airport, and an open area, whilst Gloucester City would like to sell it for development.
3	29.6.05	SALFORD	It was said Barton aerodrome is a unique facility and that policies were in place to protect it. It is one of the first passenger terminals and has a unique control tower.	Impacts would need to be carefully considered especially if they might improve the economics of the North West yet have an impact on the environment of the immediate area.	In the case of Barton Aerodrome, the authority would appoint a consultant to give advice on any impacts, so in this respect it presented no more of an issue than was normal.	It was too soon to judge how the new 2004 Act would handle situations like Barton. A national strategic spatial plan would help those employed and using general aviation sites.	The recent application by Peel to demolish the Barton club house was rejected after much lobbying by supporters. The situation was resolved by agreements between the company and those that wanted to protect it	It was said that there are no conditions applied to Barton simply because it predates planning regulations.	Barton aerodrome could be split into three areas; the existing use involving recreational activity, the listed buildings (including the grass field within their cartilage) and any potential development of the site.	Salford had supported Barton's objection to the alignment of the new stadium and so it had been changed.

	Date	Local Authorities	History / Background	Guidelines	Socioeconomic Benefits	Regional Planning	External Pressures	Conditions	Development	Other
4	8.12.05	CAMBRIDGE CITY	There is a proposal to move Marshall's and build housing. Marshall's are quite keen to relocate for economic reasons and the city needs to grow to the east; the airport is probably too close to the city anyway. The problem for Marshall's had been finding an alternative.	Whilst it might be possible to do an econometric study, a local authority wouldn't normally have the in-house resources to do this. Most authorities would not even go down this route (unless they got into an appeal situation). In dealing with PPG13, the processes existed, but in reality they were unlikely to be used.	Recreational flying was seen to involve a small group of people and would have been weighted accordingly. The business aspect was considered, but without a scheduled service there was probably not a great local value to local businesses and residents.	There was a need to view the issues in a strategic way, since most local authorities would judge it from a relatively narrow environmental perspective. GA was an issue that should be dealt with at a regional level, but the reality aviation tended to be a Cinderella activity not covered at a regional level.	There had been a whole mix of different factors, including constraints on the west side, due to university land ownership and use issues. The east was also better from an environmental and landscape point of view.	The current airport activity was acceptable, with complaints at a low level and the fact was neither the council nor the local politicians wanted to see an intensification of activity that scheduled air services would bring, even though these could help to resolve the economic issue for Marshall's.	It was fortuitous that Marshall's wanted to move, if they didn't the council would still have to tackle the housing/population growth issues and might inevitablye move down the same path. It was felt inevitable Cambridge Airport would eventually close in the long term.	
5	9.12.05	SOUTH CAMBRIDGE SHIRE	TP8 had been prepared after a considerable number of representations, starting back in 1999/2000, shortly after a major appeal decision and a large (Little Gransden) inquiry.	Prior to TP8, and PPG13, the district did not have any specific policies on general aviation. Determinations were dominated by environmental and other issues. There was now a greater balance. The CAA had not been very active in responding to enquires. They focused on the regional airports rather than small sites. There was no national framework that might be useful.	The wider economic implications of an airfield were understood by planners it was felt, in an example like Cambridge airport, this was understood and appreciated but for smaller ones it would need to be provided by the applicants at the time.	It was felt these changes would probably not have much impact on the way the district approaches general aviation. The Regional Planning would focus on housing and employment in a broad sense, and would not deal with the local issues handled by the local plan.	It was said the volume of correspondence was high in the case of Little Gransden, and if comments were material to the application they had to be considered, but there was no recollection of a particular pressure group. When pressure groups were formed, they could do a very good professional job, coordinating individuals and putting together a very strong case.	Little Gransden is now controlled by movements. It was said the weakness of the system was that planners have no control of what happens in the air, they can only control what happens on the ground. It was appreciated that efforts are made to reduce the noise levels, by fitting improved silencers etc.	Bourn had been a strong possibility as the site for the new village. Following a long running series of inquires the Secretary of State dismissed other options and directed development should occur in the Cambome area. There was increasing pressure to use brown field sites.	(South Cambridgeshire had tried to introduce a policy for GA, arising from the case of Little Gransden. It fought a long battle and lost.)

	Date	Aerodromes	History / Background	Guidelines	Socioeconomic Benefits	Regional Planning	External Pressures	Conditions	Development	Other
1	21.4.05	FAIROAKS	Alan Mann took over the airfield 30 years ago, a hard runway was built and conditions imposed for aircraft but not helicopters.	The Airport Operators Association do not help individual cases. Fairoaks fights its own battles. BBGA does not have the resources. GAAC might be helpful, but the CAA would not get involved. The DfT has published guidelines for consultative committees, and these were tested in court between a local resident and Fairoaks. The guidelines have since been revised.	An understanding of the economics of the site is not thought to be a factor in the good relationships. general economic running of the site it was agreed the leisure and training aircraft are significant contributors. Business peaks are in the morning and evening. Without leisure aircraft during the day staff would be underutilised.	Fairoaks is included in the plan (on the business side) with a reference to an extended runway but planning consent would still be required, involving an EIA and a public inquiry and with the costs involved what would be the return on investment? Agreed a more uniform approach (ie Surrey vs Hampshire) could be a benefit.	The relationship with the site's local authority, Surrey Heath and the two adjoining authorities, Woking and Runnymede, plus the local parish council at Chobham Parish are considered to be good. Councillors are not a problem mainly because there are few complaints, maybe five written complaints per year and five/six telephone complaints per month.	Conditions are complicated. Maximum movement, broken down into categories, Helicopters are not included because it was the hard runway that caused the limit. Generally speaking these limits do not cause a problem for the aerodrome.	Would like to see an inquiry if a site closes just as there is if one opens. Something like this is needed after all when Hatfield and Leavesden are lost without a whimper and where do the aircraft go.	
2	5.5.05	SHOREHAM	The airport is owned by Brighton & Hove City Council and Worthing Borough Council, regulated by Adur District Council. A decision has been made by the owning authorities to sell the site. Whilst they have generally supported the airport, they now feel unable to commit the necessary public funds.	Every single planning application, for the local authority and all neighbouring planning authorities, is checked for issues, for example communication masks or the use of cranes during construction. All authorities have a copy of the safeguarding map.	The council did understand but only because the senior planning officer is professionally qualified in economic regeneration. Others do not appreciate that an airfield is "an aviation business park with aircraft". Shoreham cannot afford to squeeze GA out as it provides its 'bread and butter'.	The regionalisation may help to avoid the parochial views of county councils but that it was also introduced another layer of quangos and bureaucracy. It was down to the individual views and prejudices of members and chairmen that ultimately determined policy, rather than political alliances.	A formal consultative committee exists, satisfying Section 35 of the Civil Aviation Act 1982, involving representatives from the residents associations and run by an independent chairman. From time to time local residents become active, such protests are short lived.	Because it is a local government site there are no permitted development rights. An Agreement 106 (Section 52) applies. Since this has not been amended it gives the possibility of amendment in the future. It movements, times, weight and the development outline of buildings.	Capital investment has been consistent but minimal, in aviation terms, at a level of £250,000 per year. A second terminal has been built and new buildings developed alongside the railway line in recent times but more might be done to enhance the site.	West Sussex County Council will probably allow more development on the periphery of the site and hopefully a realigned, extended runway. This would enable the site to be a full city airport
3	11.5.05	OXFORD	Over ten years ago an area bounding the entrance to the site was sold off for office development but since then only 7 planning applications have been made and these were minor ones. Total number of movements has dropped significantly in recent years, from 156,000 in 1998 to 86,000 now – mainly due to the changing nature of pilot training.	Oxford is fully safeguarded. Council have a good understanding of the issues, including the need to change emphasis in view of the gradual reduction in movements. Hangarage was seen as the main limitation - if Oxford could put up four or five hangers it could fill them up immediately with corporate jets.	The business plan is to change the emphasis from pilot training to business aviation. There are important business users (from JCB, Formula One, the 'road forecast' etc.) but the income from these sources would not be enough without the training element and the private leisure user.	It was felt that airports are all different, in completion with each other and do not work together. Other local aerodromes in the area were seen as minor competitors, if only from a grass parking point of view. Oxford Airport is not mentioned in the county plan.	There are regular complaints from three to four specific individuals. Only one of these is a member of the airport consultative committee. One active complainant lives in a house purchased four years ago, 150 metres off the extended centre line. Complaints run at about 20 per month with helicopters being the main cause of complaint.	Flying related conditions of use are not imposed by planning, although this may change if a Section 106 agreement is introduced. Currently only voluntary restrictions are in place, for example, hours of operation.	The airport is currently in negotiations with Cherwell concerning an "airport master plan", which proposes the replacement of an existing hangar with a new hangar. . The Green Belt is a major issue for the development of the site. Discussions are still underway regarding the 2nd hangar – a Section 106 may be necessary	Cherwell DC, as well as West Oxford DC, Oxford City and Oxford County Council are invited to the local Consultative Meetings and receive minutes. Generally they rarely attend. In the past the approach has been cautious, anticipating reactions to planning applications, but the current proposal is more proactive.

	Date	Aerodromes	History / Background	Guidelines	Socioeconomic Benefits	Regional Planning	External Pressures	Conditions	Development	Other
4	25.5.05	GLOUCESTERSHIRE (STAVERTON)	The site falls within the Tewkesbury district but is owned by two adjoining authorities, Gloucester City and Cheltenham Borough. airport is run by a limited company, with the two councils as shareholders. Gross turnover is about £2.5million.	No specific reference to the airport in the Tewkesbury plan, but the Gloucestershire Structure plan contains a direct reference, confirming the council was supportive of the airport's role but that given activity was limited by its runways it would not support any expansion. The site is formally safeguarded.	Although planners naturally were protective of the Green Belt, if there was an employment spin-off this was seen to be positive, good thing. Although business aviation contributes significantly to the overheads, smaller aircraft were also seen as 'all important' and the idea was to achieve a 'nice balance' - essentially an 'American style' approach.	It was felt that one of the reasons for the site's success was the lack of other aerodromes, the surrounding geography and the relative lack of controlled airspace. Kemble was becoming more of a competitor and aircraft parking could be lost to other sites. Gloucester was barely mentioned in the Aviation White paper.	The number of complaints from local residents was said to be very low due mainly to the great care taken over circuit procedures. Approximately six complaints, both written and by telephone, were received per quarter.	The only limitations are those that limit the type of businesses located on the site to ones that are aviation related. Movements are not restricted by the local planning authority.	It was felt that whilst some airports, when they became successful, might need to squeeze out light aircraft. There are pressures and it will go up and down with the economy but assuming the environmentalists don't get their way GA will continue. GA is a volatile industry.	Currently, in the summer, there is about one thirty-six seat turbo prop flight a week to the Channel Islands. For scheduled flights to increase there would need to be some changes in the obstacles boundaries that effectively shorten the main runway from 1,420m of tarmac to a landing distance of 997m.
5	16.6.05	CHICHESTER (GOODWOOD)	The motor circuit is part of the Goodwood estate. The airport has to make a profit. The motor circuit is very profitable and does not require much investment. If the airfield had to close the motor circuit would continue but it was not so clear the other way around.	Cega air ambulance have about 200 staff, Goodwood aerodrome has 50/60, all of whom are dependent on the aerodrome. The rest of the company employs about 300 people, which are indirectly dependent on the airfield.	As a return on investment, GA is generally not a good investment. In the case of Goodwood, the alternative might be to exploit the gravel deposits underneath the site. It is a prime site and it has been talked about for twenty years.	It was agreed there may be an opportunity for a wider view to be taken, particularly if a plan existed. However the issue will be to get GA to pay for the plan. If aviation wants to be here in twenty years time it needs to do something.	Consultative committee meets twice a year, to discuss a wide range of airfield related issues, and follow up meetings are sometimes arranged on specific subjects. Good contacts also exist with West Sussex County Council, who are generally very supportive.	The aircraft movement limit, was set under a section 52 agreement in 1987, conditions of use are imposed, for example the hours of operation, maximum weight and circuit pattern, but these present no practical limitation.	In the late 80's the hangars were say 90/95% utilised, now they are more than 100% loaded and there is a waiting list of ten aircraft.	It was said the country basically has a problem with space, relative to its population. GA needs to work out a strategy for itself. There are too many airfields, in too many irregular places, all competing against each other and offering very poor services.
6	28.6.05	SHERBURN-IN-ELMET	The club has been in existence for 41 years, leasing from the same landlord, a local farmer living half a mile away. Flying started at Sherburn in 1908 and the site occupies about 180 acres.	When asked if the local council appreciated the economic benefits of the site, it was said the council makes every effort to safeguard the flying activities. The CAA and AOPA were the two national organisations most likely to be contacted in the event of any issues.	The number of movements is maintained at about the 40/45,000 level because it is felt more movements would require a FISO at a cost of £20k as well as possibly annoying the neighbours.	It was felt the most worrying aspect would any loss of the face-to-face, hands-on, input from local planners. Regional planners were more concerned with aspects like emergency planning. The concern was planning might become more remote.	At one time complaints were at a level of 12 a day but following the actions in recent years, working with the local people and being prepared to be reasonable, the level has dropped to around two a week. One resident in particular, in a new estate, regularly complains.	There were no conditions for the three grass runways but the hard runway has conditions; in terms of movements, size, and night flying. The conditions currently pose no issues for the running of the site. It was felt there would be no possibility of renegotiating a change.	There was regular correspondence with Selby District, which is part of the North Yorkshire Region. The relationship was considered to be very good. The construction of a adjacent industrial development was used to illustrate the relationship.	The questionnaire indicated around 30 planning applications had been made by the aerodrome over the last five years. During the past fifteen years the site has developed from a relatively small aerodrome to probably the largest GA Northern airfield.

	Date	Aerodromes	History / Background	Guidelines	Socioeconomic Benefits	Regional Planning	External Pressures	Conditions	Development	Other
7	28.6.05	MANCHESTER BARTON	In the past 100% owned by Manchester City Council and operated by Barton Aero Club, in the interests of the club members, two years ago the council entered a JV with Peel Holdings, which has multiple business interests that include operating Liverpool, Doncaster (Robin Hood) and Sheffield airports.	Although the club makes regular attempts to explain GA to the local authority it was said the council did not really understand GA. Salford council tends to focus on the historical aspects of the site and on this there are very supportive.	75% of movements involved simply flying circuits or flying on a local excursion. It was said much of this would be due to circuits. Based on personal experience it was said there were few other places to fly to. The micro-climate around Manchester also affected the ability to fly further.	As regards the future of the site, conflicts will arise if Peel wish to extensively develop the site and introduce more commercial activities. Flexwings may not be allowed and so there was a wider need to ensure other these aircraft could be accommodated elsewhere.	The local council, Salford, is very supportive of the site, as evidenced by statements in their Unitary District Plan. In the past Manchester, when they were full owners were not proactive and a degree of friction inevitably occurred between the two councils, that is now more or less resolved by the new ownership structure	The relationship was very good with Salford, which takes active measures to safeguard the site, has a very positive statement in its Unitary District Plan and attends the regular consultative committee meetings. There are no formal conditions of use, but self imposed conditions on the times of operations, restrict flying between 9:00 and sunset.	It is believed Peel's long term strategy is to develop the site as a small airport to serve Manchester and Salford.	The site includes several listed buildings; including the control tower, a large hangar and the original terminal building (now disused but thought to be the first such building, with ticket office etc.) - all of which date back to the '30's.
8	29.6.05	BLACKPOOL	Owned jointly by City Hoppers Limited (47.5%), Marr Properties (47.5%) and Blackpool Council (5%). Located beyond the boundaries of Blackpool Council, planning responsibilities are Fylde's. The business park was part of Blackpool's deal with City Hoppers and Marr.	The airport is fully safeguarded and kept informed of any potentially conflicting developments by Fylde Borough Council. It was noted the council's statements in their formal plans are very positive.	The site has not made a profit for the last twenty years. The plan is to increase the level of commercial traffic. The mix made it difficult to make any profit out of GA. 50 to 60 GA aircraft resident at Blackpool was a low number. GA owners lived around the Blackpool area placing an upper limit on private aircraft owned.	The effect on inward investment was mentioned and although no large companies are known to have relocated on the strength of the airport, the interest in the adjacent business park, covering more than 30 acres, was said to be closely associated with the airport's facilitates.	As to the future for GA generally, it was seen the movements are down, possibly because of a perceived recession or higher fuel prices, but the future was not as bleak as the press might indicate.	No planning conditions affecting flying are in place due to the long term established use. Interestingly although a new terminal building was erected 10 years (?) ago but no conditions were imposed at the time, reflecting the very supportive stance taken by the local planning authority.	Both councils are extremely supportive. Airport management has regular meetings with them, in terms of quarterly consultative committee meetings and when discussing development proposals. GA would not be squeezed out with increasing scheduled flights, it had been the 'bread and butter' since year one.	The current level of movements is about 75,000 of which about 80% are GA related. Circuit training is a feature of the site due to the number of training schools.
9	21.7.05	SANDOWN	The hay-days had been in the mid nineties ('90 -'98) due to the numbers of private pilots – although fortunately the new club house seemed to be attracting more visitors once again. Sandown was in a unique position, operating in an ideal geographical position and with a supportive local community.	The council recognised the employment of some 15 staff and the inflow of expenditure from visiting pilots and passengers. In an attempt to improve their understanding of GA, councillors were invited to the site during events like open days.	It was felt movements alone were not enough for a GA licensed site to survive and they needed income from fuel, clubhouse facilities and a flow of customers from the local community.	The idea to have a national GA plan that the regional authorities could use was discussed. It was felt that provided the higher authorities were not "anti" this would be fine. At the moment because decisions were local it was possible to influence local councillors by explaining the facts.	Extracts from the IOW council website confirmed a good level of public support for both Sandown and Bembridge, in terms of their amenity value. The local councillor for the area was also said to be very supportive of Sandown airport.	There are no restrictions on the number of movements at Sandown. The site was established in 1935, predating planning and it appears that although it closed between 1974 and 1976 this was not taken as an opportunity to impose conditions. Equally neither had the recent building of the new clubhouse.	There was a reasonable relationship with the planning department in terms of getting the airfield's approvals. The new club house had been opened two months ago, and there had been a lot of contact between planning and with the airfield owner (as acquired in 2003) in order to finalise the planning details.	the golden age had passed. There was too much regulation and it looked as if it will get worse. "Do-gooders" are also seen as a threat, with councils like South Cambridgeshire not understanding about GA and others saying "What good do leisure pilots do?".

	Date	Aerodromes	History / Background	Guidelines	Socioeconomic Benefits	Regional Planning	External Pressures	Conditions	Development	Other
10	18.8.05	STAPLEFORD	The Herts and Essex Aero Club own the site but it is managed by the Stapleford Flying Club. the site was established in 1933, it predates planning regulations and for many years it was not even registered as an airfield.	site has been given a safeguarding status by the council and the aerodrome is now sent relevant planning applications. The last time an application was successfully contested involved a proposal to establish a microlight field under the aerodrome's circuit.	It was said the council fully understood the aerodrome's economic contribution, and that this was used in discussion with councillors.	A number were already leaving North Weald, however there were limits to how much Stapleford could accommodate aircraft from North Weald, due to restricted hangar capacity and space for open parking. A similar situation has existed in the past when Bovington was closed and pilots moved to White Waltham, Elstree and Leavesden. Then Leavesden was closed.	When questioned if the aerodrome generally adopted a low profile, to avoid upsetting residents and the local council, it was said that, yes, the aerodrome did want to do things – for example increase hangar capacity, but these needs were not pressed hard in order to avoid issues.	The site currently has no planning restrictions on flying activities, since it predates planning regulation, and evidently the construction of partial hard runway was not used as a means of imposing conditions. Due to concerns for the local community there are some voluntary arrangements.	The relationship with the local council was a "love hate" relationship. For example, requests for a hard runway had been consistently rejected until the aerodrome supported the council's objections to a nearby motorway service station. Following this collaboration the relationship improved and a compromise was reached over the runway, with the result a hard "starter strip" was given planning permission.	C152 have historically been the main aircraft used, because they can be maintained on-site and the capital costs have been fully recovered. However several Warriors are now being used and although the hourly costs are higher, due to the initial capital costs, they need considerably less maintenance and time in the hangar with the result aircraft utilisation is higher. Customers also prefer the new aircraft.
11	28.10.05	POPHAM	Privately owned it is strictly not a commercial enterprise, although it is run as one. The owner continued ownership for personal reasons following the tdeath of her husband, in his Spitfire. Surpluses are fed back into the aerodrome operation. A very modern pilots' briefing room was created and there are plans to upgrade the A to G radio to 'ATC' tower.	Two more hangars would probably be allowed. There is a demand for more hangarage, but physical limitations on the site would reduce aircraft tie-down area, and the financial gain. Fortunately, the number of aircraft based at Popham has not increased significantly over the past few years	The microlight school brings new visitors and activity to the café & clubhouse. Like the other events held at the site, from classic cars, motorcycle jumble and the microlight fair, the resulting activity was seen to be a positive force introducing people to GA.		. it was said many of the members were ordinary working people, that drive old cars in order to afford flying and that any increases in cost might well hit them hard.	Locals now accept the site is not going to develop beyond its current form. Four years ago, a Section 106 agreement was agreed, covering the ratio of microlights to traditional aeroplanes, the number of special flying events and a maximum 4,500lb weight limit. There are no restrictions on movements or hours.	It was suggested that costs were probably more significant to the future of GA than airfield closures caused by anti-aviation activity	The rapport between the airfield and the council was helped by the fact that Basingstoke was twinned with a French town that also had an aerodrome. As a result the two aerodromes were also twinned. Since the 106 agreement there has been little contact with the local planners.

	Date	Aerodromes	History / Background	Guidelines	Socioeconomic Benefits	Regional Planning	External Pressures	Conditions	Development	Other
12	3.11.05	COMPTON ABBAS	The site started in 1960, with a couple of Tiger Moths.	Interestingly, discussions with planners over proposed changes brought into question how they apply judgement and how dependent upon they were on guidelines. For example, issues like visual impact and light pollution seemed to be very vaguely defined and open to interpretation.	When the current owner purchased the business it was still relatively quite and only being used by pilots. A customer base of non flyers has since been developed and now provides the major revenue stream. The site's main asset is its beautiful location, said to be one of the most picturesque airfields in the UK.	In contrast it was seen that the future for GA is dire. It needs airfield owners to look at the global picture of what they are doing and have a more expansive vision that will open up sites to everybody. Aerodrome owners need to get into the fabric of society and make local people take ownership of their airfield.	Relationships with the local planners, local councils, parish councils, chief executives were described as excellent - as they were all very supportive of the airfield. This was achieved by required taking time with local people, working hard on communications and explaining how everyone is dependent upon aviation. There is not a strong enough voice in the industry to make the difference.	Regarding planning conditions, a section 106 exists. It was said to be somewhat outdated, particularly as it focuses on aircraft noise levels in excess of today's standards. Restrictions also exist on aircraft weight and it excludes the possibility of night flying and parachuting, but there are no limitations on the number of movements.	Compton is the major all year round tourist attraction in north Dorset. It is a local amenity, an education centre and a restaurant. 120,000 visitors come each year by road, needing an 800 space car park and 32 staff. Recently two hangars were built, now linked to form a 75 metre long hangar, and there are plans to improve the restaurant and add a second floor.	People have misconceptions and often think pilots are brash and own Ferraris. Once they understand most pilots are ordinary people, with ordinary jobs and cars, people became more accepting towards GA. The biggest problem with GA today was seen as lack of communication.
13	4.11.05	DUNKESWELL	Dunkeswell has the highest elevation, concrete runways in the country. They were built in 1943 and used by the US during the war. The site ceased to be a military airfield in 1965 and was then owned privately until the current owners, Air Westward purchased it in 1983.	The CAA has been very helpful in the past. For example a couple of years ago a proposal to store disused refrigerators was rejected after an intervention by the CAA. But given no other serious issues have arisen there has been no need to contact other supportive organisations.	The core issue was seen to be cost. As a licensed aerodrome additional costs were involved in maintaining runways, fire equipment etc. - and with overheads like insurance it was difficult to make a profit on fly training. It was said the future of GA will be in modern microlights with their lower costs.	it was understood that regional planning was being strengthened over county planning. It was felt this might weaken the situation for GA. There definitely existed a strong anti-aviation lobby and we had to live with it.	Relationships with local planners had improved over the years and were now relatively reasonable. Pnners appreciated the airfield activity was consistent with the local community – in that massive hangars are not going to be built.	A status quo had been achieved and a good relationship existed. Indeed, an agreement to allow a recent development of industrial units to use the airfield's perimeter road had left the planners somewhat in debt to the aerodrome.	There was a formal agreement with the local authority to ensure the aerodrome is notified of all developments that might affect flying activities. All aerodromes must have difficulties with planners who generally don't understand GA.	
14	10.11.05	WELLESBOURNE MOUNTFORD	Before WWII the field belonged to Mike's grandfather. It was purchased by the MoD and developed as an airfield. His grandfather bought back parts of it in the early sixties and his father brought more until they were able to establish a licensed aerodrome in 1981.	The Stratford District planner's were not felt to be very supportive, contrasting with Wellesbourne parish councillors who were very supportive. There had been numerous issues with the council. They really did not see the value of GA. The assumption was any noise complaint in the region was caused by Wellesbourne.	The economic value of the site, in terms of jobs, was thought to be accepted by planners, but it was felt they did not see its value in the same way as they would a factory. Planners were aware of the economic value of the site, but did not seem swayed by it.	There was also a big market for business aircraft. Businessmen need to get about quickly. Many more business are using GA. Three times a week a Citation jet brings in business people for the local factory. The more difficult it gets to travel by road/rail the less important will the cost difference become.	There was no formal consultative committee. In general there was no problem with Wellesbourne village, although some villages to the north and south west were affected.	The aerodrome operates without conditions – as it has established use. Recently the council tried to restrict movements, claiming there had been a change of use. It was thought a section 106 might be necessary for extra hangars, although permitted development rights would be exercised first.	The biggest threat to GA was seen to be development. It was said it would be a wonderful thing if airfields were protected, with owners not allowed to sell off to development.	Within the family there are different opinions about the future for the site. Some would like it developed. Mike is objecting to the application even though he would benefit financially from any development, as was the case when the family sold off the north east end of the site.

	Date	Aerodromes	History / Background	Guidelines	Socioeconomic Benefits	Regional Planning	External Pressures	Conditions	Development	Other
15	10.11.05	NORTHAMPTON (Sywell)	The original site was owned by Mike's grandfather, as farmland. Prompted by two local business men / pilots in 1927, an airfield and flying club was established.	When asked if Sywell had received any support from the CAA, it was said they had actually objected to the application. If they had been supportive it would have made an enormous difference.	£10 million had been invested, and a current plan to build an all weather runway for £1.5 million. The business case for an all weather runway was difficult to justify on landing fees and fuel sales. However by lifting the profile of the overall site would enable a small % uplift in business rentals.	Regarding the new Planning Act it was said there were no votes in aviation and politicians will not support improvements to GA. Re the need for a strategic plan, it was felt the first task would be to define GA.	Sywell's plans resulted in an "anti" movement, driven by two local business men, which resulted in a non determination. A technical loophole, plus other tactics employed, caused two councillors to resign and the council being taken to the high court in December 2002. 3rd inquiry is July 2006.	There are no formal planning conditions that effect flying at Sywell since it predates planning, although a section 106 is expected when the all weather runway is finally agreed.	Share dilution has occurred and so today there are more than 50 shareholders. This means the three take over bids that have made in recent years had to be taken seriously, according to Stock Exchange rules.	By progressively refurbishing the existing hangars and buildings on the site, it had been possible to generate rental income from non aviation businesses that could be ploughed back into the aerodrome.
16	11.11.05	FULL SUTTON	Left over from the three hard runways of the original WWII site it was originally bought in the '60's from the MoD. Runway 34/16 does not have attached planning conditions, as it had been established ten years before the watershed in the early '90's. The current licensed site was established in the '90s.	In terms of safeguarding the local councils appear to be erratic when consulting about developments. Originally the site came under the control of planners at Bridlington, who knew the site well, whereas now planning is centred upon county hall at Beverley. there was no continuity, they have the files from Bridlington, but no understanding of the site.	The flying school at Full Sutton was a non-starter, and simply a hobby. Trying to make money out of training by charging low rates like £60/hour was felt to be virtually impossible given the British weather. The social interchange between pilots was necessary and should be encouraged by the CAA. France was a good example of the right attitude towards GA.	Regarding the long term future for GA, it was said GA should have a healthy future, given the congested road and rail networks, but most likely it will just continue on as it is now. Little GA sites will find it more difficult, as the CAA appears to becoming more and more difficult to deal with.	Local residents recognise the GA activity helps to protect the area from low flying RAF traffic. The local newspaper recently carried some exchanges between residents, the conclusion of which was supportive. Apparently some Full Sutton residents have no idea there is an active airfield.	The permission laid down several conditions including flights by day and curiously "no more than five aircraft parked on the runway at anyone time", but there are no restrictions of overall movements, or weight of aircraft. It was felt the planners had put in place conditions that satisfied the objectors whilst allowing enough room for the field to operate.	Oddly, an initial request to build on the industrial side of the site was rejected as planners stipulated any airfield development should be on the green belt side. Consequently a hangar was sought and built on green belt. Another larger hanger was applied for, that also went through without any local opposition.	Permission was not easy given to a campaign by one individual, who had recently moved into the area, and objections from the manager of the adjacent prison. An agreement was reached with the prison, such that anyone flying over the prison is banned for life from landing at Full Sutton. Only twice has this happened.
17	11.11.05	BREIGHTON	Once a WWII site, built in 1943, it had been used for crop spraying after the war but for the last 13 years it had specialised in tail wheel aircraft (or real aeroplanes).		Advertising itself as a local aircraft museum, the aerodrome allows visitor access to the aircraft. Interestingly, a local race track has been approved around the perimeter of the site, probably as a result of raising the profile of the site through the museum.		Complaints are infrequent and there has been no history of sustained complaints, even with four major events each year involving flying displays.	The airfield has full unrestricted planning permission, so there is little contact with the planners. As an unlicensed airfield it stays clear of bureaucracy, and has little contact with the CAA	GA was felt to be alive and well in the area. The CAA did not help matters and were driving vintage aircraft out, causing owners to sell. As far as the site itself was concerned, it was impossible to say what would happen under the new ownership.	The site has recently been sold to a Leeds businessman who keeps a collection of vintage aircraft at the site. One aircraft based at Breighton is a Hawker Hurricane, valued at £1.0 mill. It costs £30,000 to insure. It has flown 30 hrs this year.

	Date	Aerodromes	History / Background	Guidelines	Socioeconomic Benefits	Regional Planning	External Pressures	Conditions	Development	Other
18	11.11.05	RETFORD (Gamston)	A WWII site, used in the '50s as a satellite airfield for Worksop. In 1987 it was established as a licensed aerodrome, and many of the current hangars and offices were built. More hangars have been built since, several in the last couple of years.	The 1996 government planning circular (see11/95) required planning conditions to pass six tests, yet the local council still refers selectively to the original planning consent and has done nothing to review the 1987 conditions.	The local council listen to the economic argument. Some 60 people are typically employed on the site, and people have relocated and brought houses in the area.	It was said in the seventies there had been a recognised government policy for airports, in which there was a grading from large to small sites. The government should take back control of airports in order to protect airspace, remove the parochial local government view and develop a GA plan.	There is regular contact with local planners and an informal consultative committee. One individual, who recently moved in to the area, is a well known complainant and has recently been putting pressure on the council.	Planning conditions are attached to the use of the site, concerning hours & weight. The most significant restriction however is that no flying school or club can be established, despite it being a licensed airfield. The exact wording of the condition is currently under debate with the local council.	An enforcement notice for alleged breach of the planning consent. They will argue the original conditions are invalid, according to the 1996 circular. Because the site is licensed by the CAA the use of the airfield is automatically limited, and they must inform the CAA of any intention to add hangars etc.	
19	17.11.05	MAYPOLE	Established as a private landing strip around 1968, expanded until there were 18 to 20 aircraft based at the site prior to the the current owners taking purchased it in August 2000. It soon transpired there had always been issues with local residents and the planning department.	Since taking over Maypole, the Haighs have tried to ease the planning conditions. An application to allow three days each year for fly-ins was initially accepted with an agreed limit of 40 take-offs. At the time it caused an enormous amount of fuss within the village. In the event the maximum permitted level is rarely reached.	In discussions with the council the economic argument has been aired but with only two people employed, it was not a strong point, particularly since the council understands the site is operated as a hobby and last year made a loss. A better argument was the site provided a facility and was as service to the area, but even this was not fully accepted.	The visit highlighted the politics and emotion generated by an aerodrome. It was said as much as an eighth of the residents were anti the site. The local planners had worked hard to understand the issues at Maypole, the only GA site in the district, whereas most other districts had no idea about GA.	It was said the planning department had proved to be very supportive but the problem has been residents and local councillors, with the latter seeking political advantage from the situation. The CAA has been extremely helpful, particularly regarding the objections from Manston. So have GAAC.	The previous owner accepted a range of conditions in 1974, which became permanent in 1984. Some of these have since been found to be unenforceable. The relevant ones today are those restricting movements to a maximum of 12 takeoffs per day and limiting the operating hours (8 to 9 or dusk).	Development, particularly of the council owned aerodromes, was said to be the biggest threat to GA. It was agreed that private owners were also open to offers of development and that aerodromes could close without any prospects of new ones being opened, hence the need for a national strategic plan to protect a limited resource.	The local planner fully investigated all aspects, including objections from Manston Airport, and recommended acceptance, but given the level of objection the application went to committee where despite a noise survey was rejected on the grounds of noise. This decision has been appealed, with an inquiry scheduled for mid 2006.
20	17.11.05	ROCHESTER	The council have owned the airfield since 1934. Various companies have operated the site until 1999 when a group of five pilots approached BA Systems with a view to getting the lease signed over to them. Instead the council, attempted to close the site for development. A legal battle ended in the 5 acquiring the lease.	At the public inquiry the inspector concluded there was a need for the site and the aerodrome had a future. Even so it has been very difficult to get government ministers to understand GA's issues. In Rochester's experience it has also been not just the elected political members but the council's officers, outside of the planning department, that resist change.	The number of aircraft has since increased from 35 to over 90 with a turnover of over £500,000, although is only enough to pay off the legal fees that have amounted to some £400,000 over the years. The buildings still are in repair. Income comes not from subletting but by granting a license to operate.	In the early years of the debate about Rochester's future there was an attempt to find an alternative site. Indeed the council helped look for a site. West Malling would have been ideal but it was already closed before Rochester's problems began. No where else was found. It was regretted that GA organisations, AOPA, AOA, PFA etc. had failed to mount a sufficient opposition to	Support from the local population is high at around 80%. There are very few complaints, with less than half a dozen a year. An airport Consultative Committee meets 3 to 4 times a year. Complaints tend to be restricted to a known set of individuals. One individual does actually predate the airport.	There are no conditions that affect flying. The use of buildings is affected by granting a license to companies like Cabair. Not all occupants on the site are aviation related, but as there is limited space most of the companies happen to be aviation related.	The site with planning permission for development is worth £25 million, as an aerodrome is only worth £2 million. As such the lease should to reflect the lower value but does not. The covenant requires the site is kept as an airfield or returned to agriculture. Situations may arise where the covenant is overturned. Ideally the group should purchase the site.	There is an intention to install an all weather surface. The purpose will be to provide an income that will match what the council charge for the site. It was also said it would avoid the bunching up at weekends and reduce overall noise levels.

						closures.				
	Date	**Aerodromes**	**History / Background**	**Guidelines**	**Socioeconomic Benefits**	**Regional Planning**	**External Pressures**	**Conditions**	**Development**	**Other**
21	17.11.05	REDHILL	The site was purchased about 15 years ago by a consortium of half a dozen business men.	The only contact with local planners occurs when planning applications are submitted. All planning applications have so far been rejected, on the grounds that any approvals would intensify activity. Several applications have been made for a hard runway.	Given the councils' attitude it is likely the owners, who are business men not aviators, will be looking to other means of generating a profit from the site.	The Surrey structure plan recognises that there is spare capacity at Redhill but the local planners will not allow any intensification. Two local authorities are involved with the site and both appear to be anti aviation. Their view is the airfield should remain as it is.	There is a consultative committee. A noise complaint report is made at the committee meetings, but action is taken at the time of each complaint. The current level of complaints is about 45 per year. Movements are running at about 50,000.	The airport predates planning regulations and so does not have any conditions limiting movements, operating hours or aircraft used. There are however planning conditions restricting the use of buildings to aviation related uses.	Recently the planners were approached and asked to work with the aerodrome owners to develop some form of plan for the site, but the council refused to cooperate. There are currently no outstanding planning applications.	
22	23.11.05	LASHEM	Unusually the 600 acre estate is owned by the Gliding Society. It was a WWII light bomber site. After the war it was retained until the 50's. Lasham Gliding moved to the site along with Dan Air as tenants of the MoD. In the early 90's the MoD decided to sell the site and as the longest sitting tenants, they had a right to buy the site.	There are good relationships with the local planners. The society has plans to extend the caravan site and possibly build more hangars. There is an emphasis on the environment and members seek to do things in sympathy with the environment. It was not known if a safeguarding map has been deposited with local authorities.	The biggest threat to gliding was its economics. It is almost as expensive as powered flight, more time consuming. Fuel, insurance & maintenance costs continue to rise, yet membership roles fall due to competition from other leisure activities. The critical mass to cover overhead costs may be not be achieved by many clubs.	The site is mainly in the East Hampshire district and partially Basingstoke & Deane. There has never been a need to emphasise the economic benefits of the site, since there is an acceptance of gliding activity. Planning applications have not been a problem so no reason to comment on local/county structure plans.	There are noise complaints, mainly in the summer during competition weeks, and normally from the same residents. It particularly occurs if when there are five or six tugs are operating on a very tight circuit.	There are restrictions on jet movements. A maximum of 20 movements are allowed, within specified times, but this is not an issue. There are no restrictions on glider activity. A license exists for eighty caravans on the site and it is planned to apply for double this quantity. All hangars must be used for aviation purposes only.	Lasham Gliding is the biggest gliding club in the world. Its members own the site through a mutual society so funds are used to improve the infrastructure, buildings, drains and aircraft. As a 'co-operative' it is immune from development pressures.	It main revenues are not gliding but from the lease to a jet maintenance company, ATC Lasham Ltd., one of several businesses located on the site. The surplus funds from the leases help to support the gliding activity in a way that would not be possible from gliding revenue alone
23	23.11.05	WYCOMBE AIR PARK (BOOKER)	In 1936 various farms were taken over by the Air Ministry. In the '60's it was given/transferred to the local council. The land is both owned and regulated by Wycombe District Council.	In general little external assistance has been sought from national bodies, like the CAA, AOPA etc., when faced with these local issues. The site is safeguarded and local planners actively contact the site about any development that would possibly affect flying	There was little understanding within the council of the economic benefits. Those that do develop some understanding invariably move away. Also council officers do not believe an active airfield barely makes a profit and are forever attempting to increase the rent and rates.	There was always 25 aircraft waiting for hangarage, yet WAP was denied new hangars. In other transport fields, road, rail and airline traffic, government seemed to recognise the need to provide improved and increased infrastructure.	The good neighbours policiy is voluntary; the site avoids changes that might restrict flying activity (i.e. a Section 106 agreement). There are about 200 complaints / quarter, from 160,000 movements, of which a third are gliders.	The site predates the planning regulations there are no flying restrictions. Planners rely on clauses within the district plan that cover the airfield, specifying the site is used for aviation purposes and there shall be no increase in noise.	Theoretically the council could terminate the lease, compensate BA and propose using the site for development purposes. However the local community would most likely contest such a move.	There have been approximately 13 planning applications in the past ten years, for additional hangars, extra office space. They have been rejected on the basis of increased activity and noise. (7 rejections, 4 appeals and 1 allowed).

	Date	Aerodromes	History / Background	Guidelines	Socioeconomic Benefits	Regional Planning	External Pressures	Conditions	Development	Other
24	1.12.05	LITTLE GRANSDEN	The runway was created in 1966, with one hangar. The site grew with additional hangars until, in about 1993, several new residents got together to apply pressure on the local council. The problems persisted and were not resolved until 1998 when an inquiry was held that lasted six weeks.	GA organisations did not help beyond a generic level of support, and instead planning consultants were used. During the legal battle the CAA did not support the aerodrome; this undermined the aerodrome's case. The council felt under no obligation to consult the CAA and choose who to consult.	An economic argument was made, highlighting the site's employment, taxes, rates etc, but this did not appear to influence the council.	In 2002, South Cambridgeshire proposed a small airfields policy and this was opposed by Little Gransden, with support from specialists consultants and AOPA. Even now there are issues with South Cambridgeshire – as they have only just accepted a safeguarding map for the site.	Since the settlement the pressure has evaporated, some of the original group have moved away and there are rarely any complaints from the council.	A compromise was reached through the inquiry, when Little Gransden proposed a limitation of 30 takeoffs per day and it was agreed there should be a consultative committee. The maximum 30 takeoff condition does not currently inhibit the operations.	As far as the future of the aerodrome was concerned it was secure following the legal actions of the past, however increasing regulation presented a major threat to the industry. Regulation was increasing insurance premiums. The CAA should concentrate on setting regulations, not policing them.	Based on these past experiences it was said aerodrome owners should never to apply for planning permission even if asked to do so by the council - let the authorities take enforcement action, since in the meantime an aerodrome's case will get stronger by the day.
25	1.12.05	BOURN	Bourn was constructed during WWII then purchased by the current owners, a local farming family, after the war.		RFC operates as quietly as it can, keeping their heads down and not upsetting others. he farmer, who financed and built the hangars, collects the rents from the aircraft owners		The expansion of Cambome into a new town had put pressure on the site, with speculators applying for outline planning permission. So far no permission had been granted.	Movements were not recorded electronically, but were said to be in the order of 127,000. There were no planning conditions set.	The district designed the new town to avoid issues, putting a small wood in between the new development and the airfield; Cambome parish councillors were not aware of Bourn.	
26	1.12.05	CAMBRIDGE (Marshalls)	Marshall's started as a motor business and is still a family run business with Sir Arthur nearly 102 years old. The airfield is a gateway to Marshall's maintenance and repairs operations, Marshall Aerospace, which handles aircraft from 172's to 747's.	Dealings with the planning department were handled through the Marshall's estate managers.	Due to Marshall's maintenance and repairs operations it was obvious Cambridge City understood the economic significance of the site. The airfield did not contribute much financially to Marshalls, apart from income generated by the larger business aircraft	Cambridge was potentially a regional airport, although it would need a great deal of money since limitations of space would require new car parks, buildings and taxiways.	Plans to expand scheduled services were met by protests. Then when plans to move were announced locals protested. The first idea was not dead but would depend on a carrier operating from Cambridge, enabling a sound business plan to be developed.	The airfield predates changes to the planning regulations there are no restrictions regarding flying conditions in force. Complaints about noise levels are minimal, at about one a week.	A recent proposal was to transfer the Aerospace operations to another airfield and build housing. Marshalls would not move unless it found an equally suitable site, and probably not for another ten years. The local residents were on the side of the airfield and did not want a housing estate to add to congestion.